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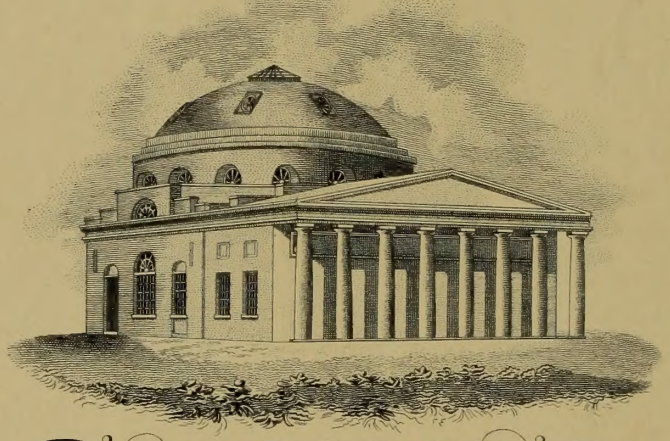

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

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UNIVERSITY OF MARYLAND

THESES

1886 (b)

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HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

UNIVERSITY OF MARYLAND

THESES

1886 (b)

Mattfeldt, ~~C. L.~~ Charles Louis	Typhoid Fever	41p.
Stier, ~~J. H.~~ Jay Hugh	Anatomy and Pathology of The Portal System	23p.
Martin, Frank	Anatomy, Physiology, and Pathology of The Duodenum	44p. (bound on small pages)
Scott, ~~H.~~ Norman B.	Diphtheria	38p.
Monroe, ~~Wm.~~ William A.	Acute Articular Rheumatism	32p.
Peck, Nelson	Typhoid Fever	32p.
Wisherd, ~~E.~~ Elmer J.	Ventilation in Health and Disease[1]	22p.
Belt, ~~E. O.~~ Edward Oliver	Artificial Anaesthesia and Anaesthetics[2]	24p.
Hilton, ~~J.~~ Julius J.	Typhoid Fever[3]	32p.
Clayton, Hubert	Diagnosis of the Diseases of Children	35p. (bound on small pages)
Braswell, ~~M.~~ Mark R.	Scarlet Fever[4]	27p.
McManigall, ~~J.~~ Joseph M.	Diphtheria[5]	35p.
DuBose, D. ~~St. P.~~ St. Pierre	Acute Lobar Pneumonia	43p.

1,2 - Slightly faded

3 - No title page.

4 - Partially faded.

5 - No title page. Partially faded.

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A Dissertation
On
Typhoid Fever.

Submitted to the examination
of the Faculty of Physic
Of the
University of Maryland
for the
Degree of Doctor of Medicine
by.

Chas. Louis Mattfeldt
Catonsville
Md

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Session of 1885–86.

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Typhoid Fever.

I will consider the subject under the following headings, viz its histology, Symptomatology, pathology, Etiology diagnosis, prognosis and treatment. Louis, in the early part of this century showed to the world the peculiar anatomical lesions of this disease, which he named Typhoid fever. The pertinency of this name lies in the close resemblance, which this disease has in its course to Typhus fever, and has the negative advantage of assuming no anatomical lesions as a basis. The late Professor Geo-B Wood, suggested as more significant, the appelation of Enteric fever, on the ground that like

the pox of variola, the intestinal affection is characteristic of this disease,
The German prefer to call it Abdominal fever. Whilest Murchison makes it have its origin and contagion in putrescent matter and in the foul and unhealthy air emanating from the sewers and in accordance to his Pythogenic theory or Hypothesis, he prefers the title of Pythogenic fever, It is also known as slow Nervous fever, Common Continued fever.
Bretonneau bearing in mind the eruptive character of the intestinal affection was lead to confer the name of Dothiénentérie (from Δοθιην. Pustule and Εντερον. Intestine) to this disease.

It is also known of Follicular Enter-
-itis and Autumnal fever,
Among the most insiduous in its
onward course to recovery or death,
Typhoid fever unites a constancy
and uniformity in Symptoms and
character throughout its career
which is not exhibited by any of
the other essential fevers
Thus the chill which often marks its
inchoative stage, followed by the usual
sign of fever is but seldom if ever
recalled by the patient. Indeed it is
generally impossible to fix the precise
day of its commencement.
For a few days previous to the estab-
lishment of the fever, the patient

experiences a general malaise & feels extremely uncomfortable both Physically and mentally, He is indisposed & complains of being tired & fatigued as after a long day of laborious work, He feels as tired when he awakes in the morning as when he retired for the night, His muscles are sore, his limbs are stiff and sluggishly move to the command of the will, and with these general symptons is united Cephalalgia over the superciliary region, Skin is dry & heated, pulse increased in frequency, Face flushed, Tongue at its base is coated, edges and Tip are however quite red, The papillae at the back of the Tongue are enlarged

There is more or less anorexia,
By this time the languor and debility force the patient to take to Bed, which fact may be held as a good criterion for determining the establishment of the fever. Occasionally during this prelude there occurs nausea & vomiting. In first week we generally have Epistaxis, which is diagnostic, but when it occurs in the 2nd or 3rd week it may become very dangerous & may turn Balance in the wrong direction. It is a danger Signal,
Not infrequently there exists looseness of the bowels, amounting nearly to diarrhoea at times and there always exists a state of extraordinary

susceptibility to the action of bathartic medicines, which fact you should bear in mind, if you have to give a cathartic in this disease and consequently you should administer a smaller dose than usual, There is tenderness in abdominal regions especially in Iliac fossa just above Pourparts ligament, Be very gentle in Pressing in this region. In the second week, the characteristic eruption of Rose spots takes place, They are red, round in shape and a little elevated above the surrounding surface & they will disappear on pressure, They are fugative in nature and occur in crops, each crop lasting about three days and then succeeded by another,

This keeps on for 14-16 days. Generally they show themselves between the 6th & 12th day. These spots are as common in Typhoid fever as the red spots in Scarlet fever. There are however very few of them on the body, but they are very distinguished. Diarrhoea is increased in 2nd week Pulse beat is accelarated. Temperature rises, highest temperature is reached between 6 and 9 o'clock at night & lowest between 6 & 9 in the morning. Fever increases a little every afternoon falling in the mornings but not as low as on morning of previous day, & increases every night above point where it was the previous evening. The following is a general.

Type of the variations of Temperature.

1st day of Fever, Morning 99° Evening 101½

2nd " " " " 100 " 102½

3rd " " " " 101½ " 103½

4th " " " " 102½ " 104½

5th " " " " 103½ " 104½

6th " " " " 103 8/10 " 105

7th " " " " 104 " 105½

The maximum temperature is attained about the 7th or 8th day.

When convalescence is coming on in the 2nd or 3rd week the evening exacerbations will become less which is very favorable. In 3rd week the morning exacerbations decrease leaving a wider space between morning & Evening temperature.

If fever will result fatally, the temperature will keep up. If temperature suddenly falls to normal or subnormal you may be sure that intestinal hemorrhage has taken place, If you however put thermometer in rectum you will find temperature more elevated. When temperature reaches 106° F two out of every three die and if it reaches 107° it is very rare that they recover.

Delirium generally comes on at end of 2nd or in the 3rd week, It is worse at night than during the day & patient will be in a state of Vigil Coma, Delirium is generally of a low muttering character, but in some cases it will assume a more violent,

aspect, He may wander away, jump out of a window &c, he resists attempts to feed him, Has a sense of drowsiness & perception is blunted, Will not keep covering on him This condition of wild delirium coincides with greatly elevated temperature, rapid pulse & other evidences of extreme illness Usually the delirium is a low monotone, mumbling incoherently and is accompanied by picking at imaginary objects on the bed clothes & subsultus tendinum. The trembling of the muscles is not only seen in the subsultus of the tendons of the forearms, but in the protrusion of the tongue. If not too far gone in stupor, the patient may put out his tongue but does it.

hesitatingly, with much trembling and forgets to return it. The delirium may go off suddenly and patient wake up after a long sleep perfectly conscious, In grave cases we have involuntary evacuations of faeces & urine. The arcana of stools should always be examined, They are of a watery character and of a yellowish green color, which has given rise to name of Pea Soup evacuations, There is a flaky material deposited which is due to excoriation of epithelium and if shreads of mucous exist, the presence of mucous patches should be suspected Tympanites occurs at end of 2nd week and is due to evolvement of

a large amount of gas. Gurgling also exists, It generally occurs about the Ileo Caecal valve. Hemorrhage is another symptom, it occurs in about one in every twenty cases or in about 5%. Amount of blood lost varies & the blood which comes to external surface is not all that is lost, The stoppage of external hemorrhage is not significant of its being stopped at the fountain head Always give a guarded prognosis When Typhoid fever occurs in a pregnant woman, it is apt to lead to abortion

Pathology The agminated or solitary glands are inflamed, The agminated

glands are grouped together & form Peyers patches. They are more or less oval in form & depressed in the centre They are found after death to be in all stages of inflammation, the farther you proceed up the intestines the less inflamed will you find the glands, down by the Ileo Caecal valve or below this, the patches may be ulcerated. They have a shaved beard appearance, black spots all around on the surface,
The changes in Peyers glands or patches takes place in early part of the disease and even as early as 48 hrs after disease has set in In 2nd week the glands become.

infiltrated and hyperaemia lessens
In 3rd week Necrotic action takes
place, that is the tissue is killed
and thrown off, Mucous membrane
will become desquamated & thrown
off at stools, Patches in 3rd week
will often ulcerate through the in-
testine and going through peritoneum
will set up peritonitis, It eats
through mucous, muscular & serous
coat of intestine. If patient is
going to convalesce cicatrization
will take place, but intestine
is never restored to its original
stability, In every case of true
Typhoid fever these Peyers patches
always exist,

We also have changes taking place in mesenteric glands, which are varying in size & occur in the Mezentery Most inflamed when one exists opposite to a Peyers patch, as a patient convalesces these glands recede to original size by Resolution or they may degenerate and form a creamy pus or may degenerate and leave a cazeous & calcareous deposit in them and whenever you see this after death you may be sure that patient has suffered an attack of Typhoid fever at a previous time and has recovered.

Spleen is at first congested and enlarged. In advanced stages

it becomes more congested and enlarged and breaks down and becomes soft. Normal spleen weighs about 7 ounces while in Typhoid it may weigh from 21-28 ounces. The Liver is not much interfered with. The coagulability of the blood is impaired. Fibrin lessened in amount & white corpuscles are increased. Tongue is preternaturally red at tip and margins and papillae are enlarged. Where person has nervous adynamia the tongue is coated with a thick dark brown coat. Muscular fibres degenerate, most common ones affected are adductor muscles of leg and

erector muscles of abdomen.
Tongue when put out trembles due to this change in muscular fibres of tongue making them weak.
Inability to sit up is due to this change also. The muscles of the heart are affected as well as other muscles.
Etiology Typhoid fever is not due to animal or vegetable decomposition alone. It depends upon a specific poison which is however favored in its growth by animal decomposition. Specific cause has as yet not been revealed May be caused by excreta of patient suffering with typhoid but how

the poison first originated we cannot say. It is not a contagious disease, When germs are first passed from body they are not well developed, but develop afterward when they reach a good soil, eg a water closet, Cess Pool &c. It is not dependent alone upon defective sewerage, but typhoid germs gaining access to such foul places are rapidly developed and the drinking water coming in contact with this, carries off the germs, or the germs may be carried off by the wind Epidemics can be traced to one case which has thrown off excreta and its coming in contact

with drinking water, or inhaling the atmosphere from a cess pool into which these germs have found access, or where the excreta has simply been thrown on Mater Terra & germs soaked into wells. People have contracted it by drinking milk, which stood in Pails which had been washed in water containing these germs. Drinking water thus contaminated is most common cause.

Period of Incubation when germ gets into Body varies from 14 to 21 days from first exposure.

The germs have great power of vitality. They may lie dormant

for a long time and suddenly break
out again, Cold will not kill
them as the last epidemic in
Pennsylvania proves, a man having
an attack his excreta was thrown
upon snow & not until snow melted
& the water had descended into
river, from which the drinking
water was obtained did the epidemic
occur. The changes which take
place by introduction of these
germs, are first interference
with action of Liver and digestion
The Bile of Liver is antiseptic
and prevents decomposition
of chyme and if formation of
bile is interfered with fermen-

-tation and formation of gas is caused, which is how Tympanitis of Typhoid is caused.
The typhoid germs are carried by Portal system to the Liver and interfering with its function, congests it and sending out serum gives rise to the diarrhoea of Typhoid fever.
Urine is apt to be changed during the fever, It is of a high specific gravity 1.025 and is scanty in amount. If defervescence takes place, urine increases in amount and specific gravity lowers.
albumen may be found. Where patients sensibility is interfered with always examine the bladder

Typhoid rarely occurs after 30 yrs
of age. Most Common between 15 - 30 yrs
Under One year it is unknown.
As to sex there is an equal liability
It occurs during age from 3 - 15 but
not often, It is not contagious,
The contents of stools should not be
thrown into Sinks, but should be
buried after being disinfected. A good
disinfectant is to take a double
handful of Sulp Iron, a cupfull
of Hydrochloric acid and a Tumbler
of Water, or you may use Chlorides,
Permanganate Potas is also good.
Typhoid and Typhus fevers are
entirely distinct diseases
Diagnosis. One main distinction is

while Typhoid is not contagious or infectious, Typhus fever is eminently so, as much so as small Pox. Diagnose by temperature curves, occurence of diarrhoea, Tympanites, Pain on pressure over Ileo Caecal valve, gurgling in this region and by Rose colored spots. One or other of these symptons may be absent but if you have a majority of them you can make your diagnosis. It is difficult to diagnose between Typhoid fever and acute miliary Tuberculosis. In the latter you find subcrepitant rales in both lungs and rapid development of dullness at

apices, In Bronchitis of Zyphoid the rales are coarser and dullness exists at the base.
Rapid rise of temperature in first few days, up to 106°F occurs in miliary Tuberculosis, There is no enlargement of spleen and the disease is not very common delirium is also present.
By opthalmic observation you will find a tubercular degener-ation of the Choroid.
From Pyaemia, Diagnose from this by history, successive sweat-ing is characteristic of Pyaemia, and also is sweetness of breath.

Prognosis

In epidemics prevalences the death rate ranges from 16 to 32 per cent, general average is about 20 per cent.

Causes of death are existence of complications as Pneumonia and intestinal hemorrhage or Peritonitis, which will tend to lower your prognosis. Very high fever is unfavorable. If by 8th or 9th day the fever does not run over 104 ½° F the prognosis is favorable. A sudden rise may indicate Pneumonia and make prognosis grave. A sudden fall may

indicate intestinal hemorrhage and it is a bad sign, Make a daily examination of Heart Sounds as if the sounds fail it is a sign for the use of stimulants &c. Prognosis favorable between ages of 15 and 40. Over 40 more unfavorable than under 40. When it attacks a person addicted to alcohol the prognosis is bad,

Treatment

When temperature does not go over 103°F by the beginning of 2nd week no medicinal treatment is required. Keep the room between 45 and 60° F.

It is best to have carpets taken out of room and also to remove all textile fabric, as woolen curtains &c. Quiet is of great importance, should not allow much talking Diet should be strictly fluid, especially milk, you can give him a half a gallon a day and if he becomes tired of this give him Beef tea, but use it sparing, as if diarrhoea exists, it will increase it You can give milk in variations First give poor milk then give Butter milk or Koumiss, the latter is made thus, Take one of the Beer bottles with patent

stoppers, fill it nearly to top with sweet milk, then put in about a Tablespoonful of Sugar & then about an ⅛ of an yeast cake. It then should be placed in a warm room for six hours so that fermentation make take place and then place it on Ice for three hours.

Another good food is to beat up one white of egg in ℥ 3 of water, strain and you may sweeten and add about ℥ 3 of Brandy.

In severe Cases, Typhoid fever can be guided, but it cannot be aborted or arrested and thus greatly depends upon good treatment

When temperature tends to become high in 2nd or 3rd week it will call for antipyretic treatment, viz Quinia or Cold water in form of bath or sponging. If temperature is above 103°F in 1st or 2nd weeks baths will be beneficial, place him in water which is about at temperature of 75 or 80°F and if temperature of patient falls at once take him out and put him to bed, but if fever takes about 15 minutes to fall to 103°, keep him in the bath until it falls to 101°; then take him out & rub & put to bed, If there is still

a tendency to high temperature after 3 or 4 baths, use the method of sponging. In 3rd week of fever do not use the bath. Watch bath of patient each time, and if you find that after the bath the patient is less restless and sleeps well, with strong pulse the bath has done good, but if it makes patient restless and sleepless, with weak pulse and quick respiration, the bath is not the remedy for this patient.

Quinine is very good to lower temperature when it, in itself is dangerous to life. Give in large doses, gr XV-XX at once when the-

temperature runs above 103° F and it will be lowered in 4 or 5 hrs and if it again rises to 104 give another large dose. It is best to give it hypodermically, give solution of Hydrobromate of Quinia dose M XX-XXV. 20 minims contain 4 grs Quinia. Dilute hydrochloric acid is very beneficial when employed in Typhoid fever, notably where blood is excessively alkaline & it improves the greyish hard coated tongue, dose about M XV, it should be further diluted by putting it in a wineglassfull of water & sweetened, Repeat every 3 or 4 hours,

For Diarrhoea. Where there are only 4 or 5 stools in 24 hours, it is best not to interfere with it in 1st or 2nd weeks, But if this continues to the 3rd week it should be checked, as it may cause perforation and as patient is very weak he will be still more weakened. Opium is the best remedy, If stomach is not irritable you may combine with a 1/4 gr of Opium a 1/4 gr of Sulph Copper. Tannin has also been used, another good remedy is Turpentine especially if you find along with diarrhoea an exfoliation of coating of tongue leaving a glazed surface and

this is a sign of advancing ulceration and perforation. Here turpentine should be given in doses of mx-xv in form of an emulsion,

℞ Turpentine mxx.
Mucil of Gum Arabic ℥j ℈s
Ol Limon ℥ ℈ss

M Sig ℥j every 3 or 4 hrs.

For Tympanitis, apply turpentine stupes to abdomen, you may also give it internally, Put the turpentine on cloths & apply them to abdomen

Delirium is observed in many cases of Typhoid, but generally in mild state. but it may become maniacal, Patient does not have any true sleep.

Opium here is very beneficial, give gr 1/16 of Sulph Morphia & repeat it at intervals of half an hour until a quarter of a grain has been given, If patient goes to sleep the remedy has done good, and should it return give more Opium, The idea in giving Opium in small doses is that it is stimulant to hearts action in small doses In mild cases of delirium you may use one of the Bromides, viz Bromide Potas gr XX-XXX or you can give Chloral in doses of gr XXV. Where perforation of alimentary canal is suspected, the symptoms are intense pain at part and

increased on pressure, he draws his knees up. Abdomen is distended and if tympanitis has not been present it is set up and if present it is increased and then there are symptoms of Peritonitis.
When perforation takes place the patient is most sure to die. In this case, lessen peristaltic action of alimentary canal and extension of inflammation and this is most beneficially done by boldly giving Opium. Pulse is quick and thready. Opium should be repeated every two hours, give it Hypodermically at first and keep on verge of narcotism.

Treatment of hemorrhage of bowels should be checked, and one of the best means is Opium as it has some astringent action on capill-aries, it acts through the Vaso motor nerves, Along with Opium give gallic or Tannic acid, Give gr iij of Tannic or Gallic acid with gr ¼ of Opium every three hours Another good remedy is Turpentine in form of an emulsion, Apply cold to abdomen on right side of body over the Ileo Caecal valve, Best way to apply cold is to put crushed ice in a bladder or Rubber bag and kept on part for 15, minutes, then remove for a.

while and then re apply. Do not
put on too heavy a weight,
Alcoholic stimulants are good
where heart sounds fail, where
heart beat is about 120, where
tongue is coated and tremulous,
Never administer them indiscrimi-
-nately but wait for indications
calling for their use, Best to begin
with Sherry wine, Temperature
of Room should kept at about
60°F and perfect ventilation is
necessary, Each patient should
have about 15,000 cubic feet of
air to breathe in, The evacuations
should be removed from the room
Constant support should be given,

No solid food should be given even when convalescence is going on, as it may cause perforation But liquid food should be given if the milk curdles, it should be boilt and Limewater added 3iv to tumblerfull of milk.

Complications

Pneumonia of a passive character and this calls for adminis-tration of alcoholic or ammoniacal stimulants, viz Carb Ammonia gr v.

Change patients position from day to day. Bed sores need some attention, and are most apt to appear at points where there is pressure of body upon the bed

They begin by a blush of the surface, and should be washed with 3ptsof Camphor or alcohol. If ulceration of part takes place it is good to wash surface with Carbolic acid gr v- Aqua ℥j. A Protective plaster may be applied as a Lead Plaster, But better than this is the dusting of Balsam of Peru over the sore None of these remedies however will do good if the pressure is not removed.

For Constipation give an enema and if this does not suffice give an aperient as Calomel gr v.

Femoral phlebitis or inflammation of femoral vein and formation

of thrombus is another but very rare complication. There is a tendency to Relapse in Typhoid fever and the relapse tends to run the same course as the primary disease It is very uncommon for Typhoid fever to reoccur after the disease has been fully destroyed
Relapse should be treated same as primary attack. It is much milder than primary attack but there are exceptions to this rule, as patients have gotten well of primary attack and have succumbed to the relapse.
Patient should eat no solid food for two or 3 weeks after

convalescence is firmly assured, avoid exercise and do not let patient undergo fatigue, Restrain him from going out in the cool of the day.

Finis

Inaugural thesis on the Anatomy and Physiology of the Portal system by J Hugh Otier.

Respectfully submitted to Provost Regents and Faculty of the University of Maryland. School of Medicine.

February 1886

The Portal Circulation or system is composed of four large veins which collects the venous blood from the viscera of dejestion. The trunk formed by their union, the Vena Portae, enters the liver ramifies throughout its substance its branches again emerging from that organ terminates in the inferior vena cava. The veins forming the portal system are inferior mesenteric inferior mesenteric splenic & gastric These veins are all destitute of valves

The inferior mesenteric returns the blood from the rectum, sigmoid flexure, and descending colon, corresponding with ramifications of the inferior Mesenteric artery. Ascending beneath the peritoneum in the lumbar region, it passes behind the transverse portion of the duodenum and pancreas and finally terminates in the splenic vein. The superior mesenteric vein conveys the blood from the small intestine and from the caecum, ascending and transverse portion

of the colon. The large trunk formed by the union of these branches, passes in front of the transverse portion of the duodenum, and unites behind upper border of the pancreas at right angles with the splenic vein, to form the venae portae. The splenic vein is formed by the union of five or six large branches, which return the blood from the substance of the spleen. These uniting form a single vessel, which passes from left to right behind the upper border of the pancreas

It receives the vasa brevia
left gastro-epiploic vein.
Pancreatic branches, pancreatico
duodenal, and inferior
mesenteric vein. It is of
large size, and not tortuous
like the artery. it terminates
at its greater end by uniting
at a right angle, with the
superior mesenteric to form
the venae portae Next we
have the gastric vein, it is
a vessel of small size
which accompanies the gastric
artery from left to right
along the lesser curvature of
the stomach, and also ter-
minates in the vena portae

Now we have come to the portal vein which is unlike other veins, it enters the liver, and is lost in this mass of cells, like the veins losing them selves in the capillaries. This vein is formed by the confluence of several veins, though principally by the superior mesenteric and splenic veins. Their union taking place just in front of the vena cava ascendens, and behind the upper border of the great end of the pancreas. Passing upwards through the right border of the lesser

omentum to the under surface of the liver, it enters the transverse fissure where it is somewhat enlarged, forming the sinus of the portal vein it there divides into two branches, which accompany the ramifications of the hepatic artery and duct throughout the substance of the liver. Of these two branches the right is the larger but the shorter of the two. The portal vein is about four inches in length, whilst contained in the lesser omentum, it lies behind and between the

Sciatic duct and artery.
These structures are accompanied by filaments of the hepatic plexus and numerous lymphatics, surrounded by the capsule of Glisson.
The renal portal receives the gastric and cystic veins, it also receives the blood from the hepatic artery after it has nourished the liver. The liver is the largest glandular organ in the body.
It occupies the whole of the Right hypochondrium and extends over the Epigastric

into left hypochondriacus.
It is attached above to the
diaphragm and extends down
below the costal cartilages.
It is divided into five lobes
by five fissures and also
has five ligaments and
its vessels are five in tum-
ber. These lobes are divided
into lobules which are very
numerous and are made
up of a network of cap-
illaries. Between these capilla-
ries is a mass of cell and
these cell have no cell mem-
brane but contain nucleus.
The vessels running between
these lobules are branches of

or a continuation of the portal vein and are called the inter-lobular veins. These divide and give off capillaries which run into the cells and go to form the intra lobular veins which begin in the center of these cells and these again go to form what is known as the sub-lobular veins and these are the beginning of the hepatic veins which carry the blood from the liver. and are generally three in number. One from the right lobe one from the left and one from the lobus Spigeli These all Empty into

inferior vena cava a-
posterior border of the liver
which conveys the blood to
the heart. If a section
be made through the liver
we will see two openings
or holes. These holes con-
tain a vessel or vessels.
in one we will find the
wall of the vessel attached
all around the opening.
and capable of being
dilated or collapsing.
This is the hepatic vein
The other opening is larger
and the vessel wall is
only attached to one side
and is capable of being

distended and of collapsing.
this is the capsule of glisson
which contains the hepatic
artery portal vein and
hepatic duct.
The hepatic artery carries
arterial blood, but this is
changed into venous before
it enters the substance of
the liver. as the liver only
receives venous blood.
The hepatic artery and duct
traverse the same course as
portal vein. The portal
vein is a confluence of
several vessels, and its
contents are unlike arterial
blood which is always the

same. But each one con-
veying such material as
is absorbed from the
soil in which it arises.
For instance the gastric
vein coming from the
stomach conveying the
material absorbed there,
digested albumen or pep-
tone, and the vessels com-
ing from the duodenum
the emulsified fat and
chyle & other substances.
The chief function of the
liver in connection with
Elaboration of blood, is
what is known as its gly-
cogenic function, which

is the production & the conversion of saccharine amyloid and all the albuminoid substances or peptones into glycogen. This glycogen is stored up in the liver cells. during the intervals between digestion. This is slowly given off into the systemic circulation ~~and~~ converted into sugar. If there be an excess of formation of sugar in urine it is passed off by the kidneys and produces the condition known as dialoltes. This condition has been produced by stimulating a certain point in

the Medulla Oblongata.
This condition continues
for any length of time
it constitutes the disease call-
ed Diabetes Mellitus.
Oily drops and fatty matter
are found in the glandu-
lar cells of the liver, and
is a constant ingredient
in state of health. In cer-
tain diseases it accumulates
in excessive quantity and
produces fatty degeneration
of that organ.
Bile is also secreted by
the liver cells. It is a
viscid fluid of a red-
dish yellow color, bitter

taste. alkaline in reaction.
It has two coloring materials
bilirubin and biliverdin
and two salts. taurocholate
and glycocholate of sodium
and also some fatty sub-
stances. cholestrin
mucus +etc.
It is formed in the hepatic
cells. from the center of
these cells may be seen
little lines or markings
passing to the circum-
ference of the cell these
are the beginning of the
bile ducts. at the mar-
gins these little ducts
empty into little bile

canaliculi and thence to the bile ducts.

During digestion the bile enters the hepatic duct and passes directly into the duodenum. During the interval of digestion the opening into the duodenum is contracted thus damming the bile back into the cystic duct and into the gall-bladder which acts as a reservoir.

The bile is not a digestive fluid, though it assists digestion first it renders the acid chyme alkaline and thus permits the

pancreatic juice to act upon it. secondly it emulsifies the fat, and thus renders it capable of being absorbed. for fat as fat cannot permeate a membrane fluidly. It is an antiseptic fourthly an antiputrefactive, if it were not for this action we would have an exceedingly disagreeable odor about us. and the odor of feces would be much worse. It is said also to act as a natural purge, or peristaltic persuader. Seven eights of the bile is absorbed, but-

not as bile. It is first
broken up and then ab-
sorbed. Bile cannot pen-
etrate a living membrane.
Upon examination in
a post-mortem. the gall
bladder is found not to
be stained or colored by
the bile, we can safely
say the person has not
been dead long. but if it
is colored by the bile most
likely been dead some
time. In case of biliary
obstruction the coloring
matter is absorbed by the
lymph which surrounds
the bile ducts and liver

and is carried into the systemic circulation and gives to the tissue a certain what we call icterus or what is more commonly called jaundice or this may be caused by a sluggish circulation or excessive amount of blood in the liver. To detect bile pigment in the urine. take a small quantity of urine on a porcelain plate and add a small quantity of Nitric acid. if bile pigment is present there will be a display of colors. pigment of bile can be in

be seen in conjunctiva of the eye. In case of victims calomel acts well. It irritates the muscular fibres of the bile ducts and gall bladder, thus producing an increased flow of bile. Counter irritation acts in same way.

Having now made mention of some of the changes of the content of the portal circulation produced in the liver. I will endeavor to trace the blood as it leaves the liver a little further.

The hepatic veins that carry the blood from the liver enter the vena cava inferior just below the diaphragm. The vena cava inferior carries the blood to the right side of the heart, it is then forced into the pulmonary circulation or lungs where it is oxygenated and returned to the left side of the heart by the pulmonary veins. it is then forced into the systemic circulation which conveys nourishment to all parts of our body. which is like a city intersected

with canals. For instance
Venice or Amsterdam.
through whose streets flow
streams and these streams
laden with barges. which
carry to each house such
supplies as are necessary
taking to one house vegetables
to another meats. and to —
another groceries. and so
to each house the necessaries or the
material it requires.
And so with the great sys-
temic arterial circulation
carrying to the different parts
and tissues and structures
of our body. the material
and nutriment which is

essential to our very Existance. and the life of the different tissues.
Thus the bones taking from the blood such nutriment material as it requires and so with the nervous system, and muscles Each one taking only such food as it requires and allowing the other to pass on

Graduating Thesis on Histology, Physiology, and Pathology of the Prostate

By

J. Frank Martin

1886. — Feb 14th.

The Duodenum is the first part of the intestinal canal, commencing at the pyloric orifice of the stomach, and terminating in the jejunum. It received its name from being about equal in length to the breadth of twelve fingers (eight or ten inches). It is the shortest, widest & most fixed part of the small intestines. It has no mesentary and is only partially covered by the peritoneum, consequently it is susceptible of considerable dilatation, hence its name Intestinum succenturiatus. Its diameter varies between an inch and a half, and two inches.

Its course is peculiarly & remarkably curved, The curve resembles very much a horse-shoe, the convexity being directed towards the right, and the concavity to the left, Embracing the head of the Pancreas, Its direction is as follows, Commencing at the Pylonic orifice, it ascends obliquely upwards & backwards to the under surface of the liver; it then descends in front of the right kidney, and passes nearly transversely across the front of the spine, terminating in the jejunum on the left side of the second lumbar vertebra.

It has been divided on account of its course into three portions: viz. ascending, descending & transverse. The first, or ascending portion about two inches in length, is free movable & nearly completely invested by peritoneum, which forms the lesser omentum. It is in relation above and in front with the liver & neck of the gall-bladder; behind with the hepatic artery and duct, and vena portae, which run between the layers of the lesser omentum; The second, or descending portion is a little longer than the portion previously described, by one inch, is firmly

fixed by the peritoneum and pancreas. It passes from the neck of the gall-bladder vertically downwards, in front of the right kidney, as far as the third lumbar vertebra. It is covered by peritoneum only on the anterior surface, in relation in front, with the right arch of the colon, and the meso-colon; behind with the front of the right kidney; at its inner side is the head of the pancreas, and the ductus communis choledochus. The common bile duct and the pancreatic duct perforate the inner side of this portion of the intestine obliquely a little below

its middle. — The third or transverse portion, the longest and narrowest part of the duodenum, passes across the front of the spine, ascending from the third to the second lumbar vertebra, in front, though at some distance from it, is the descending layer of the transverse meso-colon or the divergence of the two layers of the transverse meso-colon, & it is crossed by the Superior mesenteric vessels; behind it rest upon the aorta, the vena cava, and the crura of the diaphragm; above it, is the lower border of the pancreas the superior mesenteric vessels

passing forwards between the two
vessels & nerves, The arteries supp-
lying the duodenum are the
pyloric & pancreatico duodenal
branches of the hepatic, and infe-
rior pancreatico duodenal bra-
anches of the superior mesenteric
The veins terminate in the pancre
duodenal & superior mesenteric,
and lastly the nervous supply
comes from the solar plexus.
The structure of the duodenum,
like the structure of the rest
of the alimentary canal, is compo-
sed of four coats, viz, Serous, mu-
scular, areolar, and mucous,
The serous coat is derived from

the peritoneum, and the first or ascending portion is almost surrounded by that membrane; The second or descending portion is covered by it only in front, and the third or transverse portion lies behind the descending layer of the transverse meso-colon by which it is covered in front. The muscular coat consists of two layers of fibres, an outer or longitudinal, and an inner or circular set. - The longitudinal fibres constitute an entire but comparatively thin layer, the circular is much thicker and more distinct; Its fibres are placed closely together, and [illegible]

mucous & muscular layers, its function is to support the mucous layer, and also forms a loose substance in which the vessels divide & subdivide into smaller branches, preparatory to entering the mucous tissue, this layer also has a few fine elastic fibres mixed with it, the last layer which merits consideration, and the one which is by far the most important, is the internal or mucous coat, & I may say on the outset that it is characterized by presenting all over its inner surface a finely flocculent or shaggy appearance, like the pile upon velvet, and due to the fact that it has minute processes, named villi, & hence called the villous coat, It is one of the most

vascular membranes of the whole body. This mucous tissue has numerous characteristics worthy of study, such as the folds or plications, known as the valvulae conniventes, the villi, the epithelium, glands, etc. - First the valvulae conniventes are the permanent folds of the membrane, which are not obliterated even when the tube is forcibly distended, in this respect they are unlike the folds found elsewhere, namely in the oesophagus, and stomach, They are crescentic projections of the mucous membrane, placed transversely to the course of the bowel, each of them reaching about one half or two-thirds of the distance around

the interior of the tube, and they follow closely one upon another along the intestine. They are also known as the valves of Kerkring. Each valve consists of a fold of mucous membrane; that is, of two layers placed back to back, united together by areolar tissue. They contain none of the muscular fibres, but being extensions of the mucous membrane, they therefore serve to increase the absorbent surface to which the food is exposed, and at the same time contribute to delay its passage along the intestine. They are not to be found at the very commencement of this organ, but about an inch or some what more from the pyloric they begin to appear; I might

a little beyond the point of entrance of the duct which conveys the bile, and pancreatic juice. — The anatomical structures next in order, which are found on this surface are the very important and little villi, which are elongated, and highly vascular processes & are found situated & closely packed together in myriads all over the mucous membrane, over the valvulae conniventes as well as between them. Their form is that of minute, flattened, bell shaped membranous processes; some are conical or cylindrical, or even clubbed, or filiform at their free extremity. A few are compound, as if two or three villi were connected to-

-gether at their base. In general terms their length varies from 1/4th to 1/3rd of a line or even more; and the broad flattened kind are about 1/6th to 1/8th of a line wide & 1/20th or 1/24th of a line thick. They are larger & more numerous here, than in any other portion of the alimentary canal. Krause has estimated their number at about 60 to 90 in a square line; & calculates their total number in the whole track, to be at least four millions. The structure of the villi is remarkably complicated; Each consists of a prolongation of the proper mucous layer, covered by epithelium and enclosing blood vessels, one or more lacteal vessels, and fine

muscular fibres, with a greater or less number of small granular corpuscles and fat-globules of various sizes. Nerves, I don't think, have as yet been demonstrated as being in the villi, though they are probably not wanting. Each villus receives one or more small arterial twigs, which divide, and form upon its surface, beneath the epithelium & limiting membrane, a fine capillary net work, from which the blood is returned for the most part by a single vein. The lacteal lies in the centre of the villus, and is usually a single vessel in the smaller villi, with a somewhat expanded extremity; and of

considerably larger diameter than the capillaries of the blood vessels around. According to the observations of Teichmann, there are never more than two intercommunicating lacteals in a single villus in the human subject. As to whether or not any wall exists in these lacteals, is a point still sub judice. The epithelium of the villi, like that from all through the alimentary canal below the cardiac orifice, is of the columnar variety, the cell wall being delicate, & the nucleus distinct. The nature of both the free, and the attached extremities of the cells is involved in some doubt. Many opinion

have been advanced in regard to them by Kölliker, Funke, Brettauer, Steinach, Hauk, & finally Heidenhain Expresses his views as believing that they are prolonged into fine tubes which communicate with branches of anastomosing connective corpuscles & by means of branches from the anastomosing cells forming with the lacteal tube is thus established a channel of communication, between the lacteal and the surface of the villus, & This was thought & considered to be, by many, a beautiful way of explaining the route in which particles of oil are conveyed from the intestine into the lacteal, but it

can be accepted as a perfect satisfactory. The muscular fibres within the villi, although not always found in man, was first discovered by Brücke. The fibres make up a thin layer which are dispersed longitudinally round the commencement of the lacteal, & according to the disarrangement produce a very obvious retraction of the villi. - During digestion, the epithelial cells become turbid with minute oil drops in their interior, which obscure the nuclei, & in like manner the tissue of the villus itself, becomes turbid. - There are quite a number of glands located in the portion of the alimentary canal, and

some especially characteristic of the portion, namely, Brunner's glands. & also those which I deem worthy of mention although they are found elsewhere in the canal, and when enumerated are as follows, The Crypts or follicles of Lieberkuhn, The solitary glands & some times a few of the agminated glands or Peyer's patches, -

The Crypts of Lieberkuhn, The smallest of these structures, & when I say this I mean glandular structures, and consist of little open tubes which are placed perpendicularly to the surface and are found between the villi are very small, and lined with epithelium, being only about $\frac{1}{50}$ of a

lies in diameter. The glandulae solitariae, are small, white, & rounded being slightly prominent bodies about the size of a millet-seed, & are not so numerous here as lower down in the bowel. They are simply small glands which have no orifice, & I leave them with the small amount of description, so also the Pyer's glands for the latter are so rarely found this high up, that they need not be dwelt upon to any further extent.

Brunner's Glands are small rounded compound glands & exist almost exclusively here in the duodenum and are most numerous at the upper end, they are imbedded in

the areolar tunic, & are true compound racemose glands, consisting of minute lobules & containing branched ducts, which open into the intestine, their secretion is alkaline mucus, in which there are no formed elements, & which has no digestive action upon coagulated albumen. — In regard to the nervous distribution in the coats of the duodenum, I would have state before leaving this subject, that Auerbach & Meissner have made two recent discoveries viz. the rich & peculiar nervous plexuses thrown as the Plexus myentericus of Auerbach, which is set the circular & longitudinal fibres,

and the other plexus situated in the submucous layer. — And both plexuses extend from the pylorus to the anus —

Having completed the consideration of the anatomy of this part, I will now on & take up the physiology or its normal function, — And at the outset I would state that it is second only to the stomach in importance as a digestive cavity. It is here into which the copious secretion of two of the largest glands of the body — the pancreas & liver — is poured, — In fact most of the digestion of the alimentary track takes place in this tube,

Before speaking of the changes that

the food and digestion here, I will say a word in regard to the crude anatomy of the Pancreas, an organ which was for so long a while looked upon as an insignificant gland, but recently it has been proven with all due justice to it, to be one of the most important in the abdominal cavity. It is a large compound sacculated or acinous gland, analogous in its structure to the salivary glands, being composed of irregular pockets of gland tissue, attached by its lateral branchlets to the main central duct (canal of Wirsung). The saccules are elongated and have a difference of structure in their

central and peripheral sides, so that an external or homogeneous zone and an internal granular zone may be distinguished, each zone corresponds to one half of the cells, the clearer half being next the boundary, and the granular half next to the lumen of the saccule, the relative width of these zones varies with the digestive process, so that the nuclei which are situated between them sometimes appear to be in the outer clear zone, and again in the inner granular zone. - The central duct is composed mainly of elastic tissue, lined by a single layer of cylindrical epithelium.
The secretion commences immediate

-tely after taking food and rises rapidly for a couple of hours, then falls, and rises again in the later hours of digestion, five to seven hours after a meal; then it gradually falls for 8 or ten hours, & then ceases completely when digestion is at an end, immediately after active digestion or secretion is over the central granular zone is reduced to a minimum owing to the paucity of granules; and consequently the outer zone occupies the greater part of the cell, but during rest the cells are busily active & the granules reappear. It has been concluded that the special active protoplasmic proteolytic ferment

8. This organ does not exist prior to the period at which the secretion is formed out from the glandcells. Again it has been assumed that the formation of the cells [illegible] that the secretion formed out [illegible] [illegible] [illegible]

and hepatic ducts. It descends along the right border of the lesser omentum, behind the first portion of the duodenum, in front of the vena portae, and to the right of the hepatic artery; it then passes between the pancreas and descending portion of the duodenum, and, running for a short distance along the right side of the pancreatic duct near its termination, passes with it obliquely between the mucous and muscular coat, the two opening by a common orifice, generally upon the summit of a papilla, situated at the inner side of the

descending portion of the duodenum, a little below its middle.-
The first change that ensues upon the entrance of the acid contents of the stomach into this organ, is the throwing down of a copious cheesy precipitate, caused by the acid contents of the stomach coming in contact with a gush of alkaline bile, & the precipitate consists partly of acid albumen (para peptone) and peptones thrown down by the strong solution of the bile, salts, and partly of bile acids, the salts of which have been decomposed by the HCl of

the gastric juice, with the bile acid the pepsin is mechanically carried down. Thus, immediately on their entrance into this tube the peptic digestion of the gastric contents is suddenly stopped, not only by the precipitation of the soluble peptones and the shrinking of the swollen parapeptones, but also by the removal of the pepsin itself from the fluid and the neutralization of the gastric fluid by the alkaline bile.

By thus checking the action of the gastric ferment, the bile prepares the chyme for the action of the

pancreatic juice, & the pancreatic digestion follows.—

The pancreatic juice is of all the digestive fluids the most general solvent. It acts upon those great classes of food stuffs which require modification to enable them to pass through the barrier that intervenes between the intestinal cavity and the blood current.— Its numerous actions are as follows.

1st It changes proteids into peptones, 2d it profoundly modifies fatty substances, and 3rdly it converts starch into soluble sugar.

Its activity in producing these

various changes, is due to the different ferments it contains. The first one that merits consideration, is Trypsin, which converts nitrogenized substances or proteids into peptones, and the conditions requisite for its perfect operation differ from those necessary for the action of pepsin in the gastric juice which also converts proteids into peptones, in that the presence of an acid is absolutely necessary for peptic protolysis, whereas an alkaline reaction is required for the action of trypsin, and as the preliminary stage in peptic peptone

is the formation of acid albumen, so the tryptic peptone is first produced from alkali-albumen, and here the sodium carbonate, as an alkali, seems to play the same part towards it as the hydrochloric acid does in gastric digestion, besides these differences between the mode of action of pepsin and trypsin in producing peptones, trypsin has a peculiar power upon proteids which has no analogue in the peptic action, while this tryptic peptone is being produced a further change occurs, which gives rise to the formation of two crystallizing-

able nitrogenous bodies known as
lucein and tyrosin, the former
belonging to the fatty acids, and
the latter to the aromatic acid
group. These substances, are
the result of the decomposition
of peptones, and increase in
amount towards the latter stage
of the action. Among the products
which result from the decompo-
sition of the peptones are two sub-
stances namely indol and sk-
atol, from which the pancreatic
digestion derives its peculiar
odor.-
The next action which pancre-

-ate juice has, is upon fats,
and this action is due to a
special ferment known as
steapsin, which produces sapon-
ification, by splitting up the
neutral fats into glycerin and
their fatty acids. The acids thus
formed readily unite with the
alkali present, and thus form
soap. Again, it so reduces them
to such a state of fine subdi-
vision, that it emulsifies them.
The production of this condition
is facilitated by the quantity of
albumen in solution, by the
alkalinity of the fluid, by the

presence of the soap alluded to above, and by the motion of the intestines.—

And finally its last action is upon starch, and this seems to depend on a special ferment also, known as Amylopsin, whose action seems to be identical with that of the saliva, except that it is more energetic, and rapid in that it affects raw as well as boiled starch.—

I pass on now to the physiological function of the other secretion which empties into this organ, namely the bile.—

The bile is one of the chief secretions of the liver, It is formed in that organ and passes down through the interlobular ducts; and then following the course of the artery and portal vein, leaving that organ at the transverse fissure and finally is conducted into the duodenum by the ductus communis choledochus.-

The composition of the bile is as follows,- water, Bile salts and acids, cholesterin, colering matter, mucus, Fats and inorganic salts,- The bile acids are two compound acids, glyco-cholic

and taurocholic, which exist in the bile in combination with sodium. The greatest part of the mucus is produced in the gall-bladder, some of it comes from the mucous glands in the bile duct; this is passed in an unchanged state through the intestine & is evacuated with the faeces. - The bile pigment is chiefly the reddish form called bilirubin, which gives the deep orange red color to the bile. I find I am wandering from my subject most horribly, so must return to it, and hasten on. -

The bile arriving at the duodenum, being so alkaline in reaction checks, as it has been previously mentioned, the action of the gastric juice, also stimulates & excites the muscles of the intestine, to increased action and there-by aids in absorption and promotes the onward movement of the food, in fact this stimulation may amount to mild purging. Thirdly it moistens & lubricates the intestine and faeces. Fourthly acts as an antiseptic, here again, it has a very important function to perform. It is supposed to restrict the

formation of certain of the sex-
products, such as indol, - but
it is not aseptic, since bacteria
abound and thrive in the intestine.
Fifthly, it acts in the emulsifi-
cation of fats, although in a much
less degree than the secretion of
the pancreas & sixthly, as an
aid to absorption,
notwithstanding all these various
actions in aiding the processes
of digestion, yet it can't be
considered in the strict sense
of the term a digestive fluid,
In other words it has no specific
action upon digestion.

Having gone over the main points of the anatomy & the most important physiological functions of this organ, I will now refer briefly to some of the most important pathological conditions which this tube is liable to be the seat of, and to a limited extent the effects that some of these changes have upon the system at large.

The tabulated list I will enumerate is as follows,

1st Duodenitis

2d ulcer of Duodenum

3rd The involvement of duodenum in pyloric cancer.

4th inflammation that comes on in infectious diseases, e.g. Bilious Pneumonia -

As simple or ordinary inflammation, in the mucous membrane of the duodenum, which is analogous to inflammation of other mucous membranes, constitutes, as there is every reason to believe, the pathological condition giving rise to the affection called Icterus or Jaundice, in the majority of the cases in which the affection is not incidental to structural lesions of the liver or of surrounding parts, I will

take up some what in detail the consideration of jaundice and cholaemia as a consequence of catarrhal inflammation of the duodenum.-

The presence of bile pigment in sufficient quantity to give to the conjunctival membrane of the Eyes & to the skin a yellow colour constitutes the morbid condition known as Icterus or Jaundice. The latter term is more commonly used, but both terms, as regards their significance, relate to yellowness of the surface from the presence of bile pigment, whereas

Cholaemia implies the presence of all the bile constituents in the blood. Physiological and pathological facts point to the accumulation, more especially of cholesterin, as affording a rational interpretation of the phenomena of "cholaemic intoxication" or as it has also been called, "brave jaundice." Of course the terms Icterus or Jaundice don't mean, strictly speaking, a disease, but merely the symptom of many diseases the causes of which are numerous - The presence of bile in the blood, or cholaemia, is however, the result of the absorption of the

bile after it is secreted by the liver, by the lymphatics of that organ, and is conveyed by the thoracic duct to the blood. Thus when such a condition is produced, & produced in the way I have mentioned, we term it Hepatogenous, in contradistinction to Haematogenous jaundice, which when defined means that a pigment analogous to, if not identical with, that of bilirubin, may be the result of the distruction of red corpuscles, irrespective of any action of the liver, giving rise to some

is [illegible], [illegible], the [illegible]
[illegible] [illegible] [illegible] [illegible] is [illegible]
[illegible] [illegible]. —

Bile being in the blood acts as a sedative on the circulation and nervous system, the heart's action is usually diminished in frequency, pulse falls some times to 60 or 40 per min. This effect is attributed not to the presence of the pigment, but to the [illegible] acid salts. Respirations diminished, temp lowered, mental faculties are dull and there is a disposition to somnolency, many other symptoms are observed, but I shall not enumerate them, as my subject must be closed.

Thesis

on

Diphtheria

Diptheria

Diptheria is taken from the Greek word Dipthros, a membrane. It is an acute specific disease, accompanied with an inflamation of the mucous membrane of the throat, and sometimes invades the nasal and air passages, with an exudation, this disease often prevails both epidemically, and endemically in certain places, it is supposed to be both an infectious, and contagious disease, The exudation occurs in various situations, particually on the mucous surface of the soft palate, uvula, tonsils, and pharynx, this exudation is a peculiar Caseoplastic lymph, which together with epithelial cells form a thick tough membrane.

Which is generally called false mem-
brane. The Geographical distributions
of diphtheria. Epidemics of Diphtheria
have occured in Countries far apart
from one another, and differing
essentially in Physical features and
Climate; In recent years the Geographical
distributions of the disease seem to have
become greatly extended, which is
probably attributable to the increase
inter-Communication of people, Diphtheria
seems to have its favorite localities,
localities in which it is endemic, and
frequently epidemic. Aetiology, The
disease is contagious apart from
endemic and epidemic causes,
affecting its maintenance in force,

and its out burst at particular time, and in particular places, there are aetiological influences belonging to individuals in respect to predisposing causes, as age, and heredity. The predisposing causes, are those which run the patient down and produce a morbid condition of the blood. The exciting cause are poverty and its concomitants, as unventilated and filthy lodgings, scanty clothing, and imperfect alimentation, impart to individuals a receptivity for the contagium of Diptheria, a similar receptivity seems to exist in Tuberculous persons, and in all run down subjects, Scarlatina, Whooping cough, and measles.

seem to leave the patient peculiarly predisposed to diphtheria, diphtheria of the air passages may occur as a secondary disease after a common inflamatory sore throat, a circumstance which has led some to believe that diphtheria is an inflamatory disease, Recently delivered women seem to receive easily the diphtheritic poison, With regards to the age, diphtheria is most common between the ages of two and ten years, persons are attacked after thirty years of age, but there are occasional victims at all ages, from the earliest infancy to old age, Diphtheria does not seem to be hereditary, but a

special aptitude to receive and
develope the poison evidently pertains
to certain individuals, and families
In some families there seems to be
a certain stamp of similarity of
constitution, in which the members
are especially disposed to receive
and develope the Diphtheritic contagium.
The disease runs its course in
from eight to ten days. In this
class of cases complete and rapid
recovery often takes place, but in
the more malignant cases, the
disease may run its course from
health to death in one day or
more, There is a great diversity
of opinion as to the maximum period.

There are facts however, which suggest the possibility of the Diphtheritic poison remaining dormant in the system for weeks and months, until called in to activity by favoring circumstances. The invasion is insidious, slight fever, drowsiness, general discomfort, rigors, pallor, tickling cough, huskey voice, and hoarseness often ushers in Diphtheria. Very often there is slight diarrhoea. but these symptoms seperately or in conjunction, may occur in children from a great many causes, but they assist in favoring a diagnosis when carefully studied in conjunction one with the other. The invasive symptoms are sometimes

so slight as to escape notice, sometimes on first: second. or third day of the disease, the patient is carried off before any exudation has taken place, The patient dying in a state of profound prostration from primary toxaemia, The diphtheritic poison sometimes kills without producing the diphtheritic follicle, the characteristic feature, as stated is the presence of false membrane, that is the local affection is an inflammation attended with the exudation of lymph, the fauceal mucous membrane, in the majority of cases is primarily affected, the first appearance is redness of the

fauces accompanied by more or less swelling of one or both tonsils. The exudation at first thin and semi transparent, becomes opaque and more or less thick. It is at first soft, like exudation in other parts, but become more or less dense and firm. The lymph is deposited in layers, form a false membrane, this is white or ash colored but may become dark and even black from decomposition. It may also be colored by remedies or matter vomited. The patches of exudation present well defined margins when the exudation is very thick. The false membrane looks

like wet parchment, examined microscopically it shows fibres, Granules, the epithelium proper to the mucous membrane, to which it adheres more or less closely, The or both tonsils may be alone affected, there are sometimes greatly swollen so as all most to meet, and in other cases they are not very much enlarged, the exudation may extend over the posterior part of the pharynx, palatine arch, and uvula, and form over the greater part or whole of the soft palate, Redness extends beyond the margins of the exudation, and part affected. with the forceps the false membrane

may be detached in strips, and the mucous membrane beneath it simply excoriated. Often bloody points may be seen from where the membrane has been detached. The false membrane when thick, loose, and dark presents an ulcerated or gangrenous appearance. Sooner or later if life be sufficiently prolonged the false membrane is thrown off, the exfoliation takes place sometimes in three or four days, and sometimes delayed until twenty days, sometimes followed by a second, third, or even fourth formation of false membrane. The lymphatic glands of the neck especially

those behind the angle of the jaw, are more or less enlarged, painful, and tender to the touch in a great many cases. Generally the ammount of enlargement corresponds with the affection in the throat, If it be limited to one side, then the glands on that side will be alone affected. The glandular affection rarely proceeds to suppuration. The diphtheritic exudation in the throat is to be discriminated from follicular secretions, which is sufficiently common, especially over the tonsils, the later is a pulatious deposite, not membriform, and moveable in strips or patches, and may be seen to dip into follicles

Pharyngitis with follicular secretions is often called diphtheria, the term however is correct only to cases in which a true diphtheritic exudation exists during the epidemic prevalence of diphtheria, Cases of simple pharyngitis or of pharyngitis with follicular secretions are often rife, the affection in these cases may be due to epidemic influences, but the disease is comparatively trivial, hence the rate of fatality in different collections of cases of so called diphtheria will vary according to the accuracy of diagnosis, or to the strict observance of the proper application of the name, In mild cases the disease

manifests itself locally in the fauces alone, but in more or less severe cases the diphtheritic affection extends to other parts. The anterior and posterior nares, or perhaps one or both sides may be the seat of the inflammation and exudation. The eustachian tubes sometimes become affected. The mucous membrane of the cheeks and gums may present patches of, or be completely coated with false membrane, the eye is also sometimes affected, and the diphtheritic conjunctivitis involves a great danger of destruction or impairment of vision. Chiefly from opacity of the cornea.

The diphtheritic inflamation sometimes extends into the oesophagus, and may extend to the stomache, but while it the later quite rare, a more serious extension is into the larynx, the disease then involves the morbid conditions which exist in true or diphtheritic croup, as in croup the inflamation and false membrane extends to the trachea and may extend into the bronchial tubes, but it does not generally extend beyond the trachea. In cases where the parts next to the fauces become affected, the affection is not to be considered as spreading to these parts, but are consecutively.

invaded, that is the affection of the parts as of fauces is a local manifestation of the constitutional disease. The parts communicating with the fauces are not the only parts liable to be affected in cases of diphtheria. The meatus auditorius externus, anus, are also sometimes affected. The exudation also appears in some cases on the skin in parts excoriated, as behind the ears or vesicated surfaces. or wherever the skin has lost its epidermis, parts other than those primarily affected are liable to be invaded at any time during the career of the disease,

Symptoms of diphtheria, or Diphtheria presents in different cases. such difference as regards. General and local symptoms, The attack is some times acute commencing with a Chill more or less pronounced, which is followed by high febrile movements, but frequently the development is gradual and insidious, The patient complaining of a Good many ahments, and the characteristic affection of the throat being found on inspection, Where there was a few or no local symptoms pointing to the existence of the disease, The iniatory symptoms have no definite relation to the future severity

of the disease, or to the parts which are to be the seat of the inflamatory exudation, After the disease has been developed, the symptoms are then developed into General and Local, The affection of the fauces is not often accompanied with very much pain or soreness, hence its existence is liable to be overlooked, the sensibility of the parts in some cases seem to be diminished, Deglutition is often painful, and in some cases unattended with pain, Incomplete paralysis of the muscles of deglutition which will be noticed as a sequela is sometimes a concomitant of the disease, which gives more or less

difficulty in swallowing, especially fluids, which may regurgitate through the nose, if the exudation is abundant and loose, pharyngeal rales may be heard, particularly while the patient is asleep. The breath is in some cases very foetid, which may give rise to the suspicion of gangrene of the throat or lungs, which sometimes occurs in this disease. The extension of the false membrane over more or less of the Buccal mucous surface.
Give rise to more or less pain in connection with the introduction of food or drink into the mouth with stiffness of the parts, which

often gives rise to difficulty in articulating and absence of taste. When it affects the anterior nares it is accompanied by a discharge which produces irritation and swelling of the upper lip. If one nostril be affected, the irritation will be limited to that side. As a rule the gravity of the disease is associated with the extent of the local affection and abundance of exudation. The symptoms denoting an invasion of the larynx are those which belong to the history of diphtheritic laryngitis or true croup. The cough has more or less of the character known as croupous

Hoarseness of the Voice, labored respiration, the respiration is embarrassed paroxysmally, as in true croup. from spasm of the muscles of the Glottis. swelling of the tonsils and pharynx may occasion some obstruction to respiration without invasion of the Larynx. Diminished respiratory murmur and embarrassment of the respiratory function out of proportion to the amount of laryngeal obstruction, denotes invasion or extension of the disease into the Bronchial tubes. In very mild cases the patient does not go to bed. but however mild the case may be at the onset or during the disease

there is a liability - to the occurrence of diphtheritic inflamation in a near situation. which may go on to graver symptoms, and to important sequele, In cases where the disease is mild throughout the diphtheritic inflamation is confined to the fauces. or sometimes to a limited space in some other part: In cases of greater or less severity, the tonsils in some cases become very frequently, and in other cases not very much so. In the course of the disease the pulse is more or less rapid. afterwards falling below the average of health,

The pulse is also sometimes soft or compressible, and irregular, a symptom of unfavorable omen, if it be independent of pre existing organic disease of the heart, Hemorrhage sometimes takes place from the Nostril, and occasionly from the throat and mouth, these create great danger. There rarely presents very much increase of heat, and sometimes in the course of the disease the skin is cool. In grave cases the skin presents an anaemic aspect the desire for food is generally is diminished, Vomiting is a frequent and in some cases a prominent symptom, Diarrhoea not uncommon

and is a bad sign, In cases where the disease extends into the oesophagus, the false membrane is expelled by Vomiting, if death does not take place before expliation is complete, In some cases the mind becomes impaired. Slight passive delirium and sometimes it may be active. When there is coma the disease often terminates fatally, Albuminuria is a frequent symptom. Generally albumen in the urine is in small granules, but sometimes abundant, It is large in amount When there is a good deal of diphtheritic exudation, The duration

of the disease is from one to two weeks, but in fatal cases death may take place much sooner, aside from the characteristic of the diphtheritic affection, complications are rare, Pneumonia is occasionally seen, and affections of the kidneys giving rise to an abundance of albumen in the urine, and sometimes general dropsy is perhaps to be regarded as complications, Sepsis from an infected part in the disease, Anaemia and general debility are apt to persist for some time, Feebleness of the heart's action sometimes exists to such a degree as to lead to

sudden death from syncope, the fatality appears in some cases to be due to a paralytic condition of the heart. The muscles of the soft palate and pharynx is often affected. The paralysis is sometimes limited to the muscles of the palato-pharynx and mouth, but often extends to other muscles. The paralysis sometimes affects the muscles of the lower extremities and is developed gradually, and is often preceded by a tingling, numbness, and sensation of coldness, & sometimes takes the form of hemiplegia, with the paralysis of motion, the sensibility in the affected parts is

diminished, sometimes, the sensibility of the integument is increased, which is known as hyperaesthesia, sight is often affected. Vision may be affected by paralysis of the external recti, causing convergent strabismus, but the most frequent form of disorder is presbyopia, amaurosis sometimes occurs, which is supposed to be due in part at least to anaemia, the paralysis is sometimes limited to the organs of vision and others of special sense as taste smell or hearing, ~~as~~ The paralysis sometimes affects the inter costal muscles and diaphragm giving rise to dyspnoea, and danger from inability to

Carry on the respiratory act.
It is thought that the pharynx of
different parts seem to be connected
in some way the spinal condition
which exist in the disease, as regards
the frequency of the paralytic sequela
more or less impairment of deglutition
is common, but paralysis does
where takes place in the majority of
cases. These sequels often take place
in a mild form as a sever form
of diphtheria,
Diagnosis, Prior to the occurence of
inflamation and exudation, the disease
presents no distinctive traits; and
the characteristic local manifestations
are preceded by general symptoms

for a variable period, then symptoms are sometimes slight, but in some cases violent; The diagnosis is easy when the local manifestation has taken place, the only error liable is confounding with the true diphtheritic ~~exudation~~. the follicular secretions of pharyngitis the diagnosis of diphtheria from membranous laryngitis is often difficulty, diphtheritic laryngitis usually more limitation of the lymphatic glands of the neck, and more discharge from the nostrils, Follicular-pharyngitis, like diphtheria, commences with sharp fever which is ephemeral, and is attended with the formation of round white masses in the site of the follicles.

usually over the tonsils only. then
In cases do not occur in patches like
those of diphtheria. except when two or
three are close together and unite.
some times the presence of albumen
in the urine. with or with out
Cast, helps in making a diagnosis
for it is more common in diphtheria
than in Croup.
Boy now, the danger is first from
invasion of the larynx, of the cases
where the air passages become involved
the greater portion end fatally.
The prognosis in these cases are all
ways bad. Apnea either causes or
contributes to the fatal result; when
ever the larynx is involved, the

danger is second from asthma. The violence of the disease may destroy life in forty-eight-hours, from the time of the attack, or maybe at an earlier period, But in the greater number of cases when the disease proves fatal by asthma the powers of life is gradually exhausted, and death takes place in the second week. Other unfavorable signs are frequent vomiting, diarrhea, copious epistaxis, or hemorrhage from other parts. Great frequency, irregularity or feeble pulse, coldness of the surface, abundance of albumen in the urine, convulsions, delerium, and coma, An important fact

is the liability to sudden, fatal syncope in this disease. It generally takes place on some unusual exertion of the patient, as getting out of bed, &c. properly in some cases where there is a fatal result suddenly, death is due to formation of clot in the right side of the heart. Paralytic affections which are liable to occur do not generally involve danger, the danger in these affections result to in nutrition. In cases where deglutition is difficult; and to apnea when the respiratory muscles are involved in the paralysis. Treatment, with reference to the therapeutical indications, it is

convenient to divide cases into those with and those without diphtheritic affection of the larynx, and first, of the treatment of cases in which the larynx does not become affected. Many attach great importance to the local treatment. I regret really, one reason for this is the belief that the system becomes infected by absorption of the diphtheritic matter, another object of local treatment is to arrest the progress of the exudation and prevent, if extension. but with reference to this object, it is to be considered that the local affection does not properly speaking, spread, but the progressive extension and

successive invasion of ~~the~~ diphtheritic parts, are due to the agency of an internal determining influence, the restriction of the diphtheritic affection in one case to a small space, and its wide diffusion in another case depend, on the essential morbid condition that constitutes the disease, and if so, topical treatment will be likely to exert little or no influence in limiting the amount or extension of the local manifestations. Passing from the theoretical views to clinical experience, a great many have been led to discontinue ~~Cauterization~~ the parts, as was heretofore done, a gargle of the chlorate Potassium and Diet chlo-

Iron may be used if the patient is not too young or the act of gargling does not occasion much annoyance, Ice may be taken in the mouth in small pieces if agreeable. If there is fetor of the breath weak solution of Chloride soda may be applied, or a solution of Iodide of Bromine ♊ gtts to ℥i applied by means of a camels hair brush, As a Germicide the Bi chloride of Mercury is very good, as the germ theory of disease is pretty well adopted, A mild astringent application may be sometimes used with good effect, As regards to the General treatment, It is to be considered that the disease is not controlable by any known

Specific remedy. In view of the fact, and also of the danger being from asthenia, the great effect is to support the system, and try to keep the patient alive until the career of the disease has ended. The therapeutical indications are tonics, stimulants, and alimentation, of remedies, the sulphate quinia, Tinct. Chloride Iron, and the Chlorate Potassium are especially to be named as being found useful, There is a great importance in alcoholic stimulants, used with discrimination, in the use of the stimulant, the Physician is to be guarded by indications, and by careful watching the immediate effect, Alimentation is an

essential part of the treatment, the diet should be concentrated, highly nutritious milk and the animal essence meet the requirements. Dyspeptic incidental to the disease claim palliative treatment, vomiting to be relieved by Bismuth, creasote, or small doses of Hydrocyanic acid. When diarrhoea is present. Opium and astringents are to be used, Anodynes are often required for restlessness, Hemorrhage calls for Haemostatics both Topical and internal. The treatment in cases when diphtheritic Laryngitis becomes developed meets the same general principles as cases with out the laryngeal affection. But in addition

are indicated measures to hasten the separation of false membrane in the larynx, lactic acid and lime water being a good agent for the false membrane, Quinine should be given to reduce the temperature, With regard to Tracheotomy, when the danger from laryngeal obstruction is imminent, are the same as in primary croup, beside the peril of the general disease, prostrating toxaemia, deficient innervation and paralysis of the heart and respiratory muscles. The patient has the risk of dying asphyxiated from obstruction of the air passage by false membrane. When the medical treatment has failed

then you will have to resort to the Surgeon if it is thought that Tracheotomy is the only means of saving the patients life there operate at the same time with the other indications by [illegible]

Respectfully
N. B. Scott

A Thesis

on

Acute Articular Rheumatism

by

William A. Monroe,
of North Carolina.

1886

Acute Articular Rheumatism

Definition:— Acute Articular Rheumatism is a constitutional disease, characterized by a specific inflammation in the fibrous structure about the joints, with a tendency to involve fibrous structure elsewhere, notably the pericardium and endocardium. Is accompanied by fever and does not have a tendency to suppuration, being due most probably to an excess of lactic acid in the blood. Allied to Acute Rheumatism are Sub-Acute and Chronic Rheumatism, which differ from it only in intensity and duration.

Aetiology:— An hereditary pre-

disposition undoubtedly exists in certain families, and a predisposition to it may also be acquired.

Certain ages or times of life are more disposed to it than others, as it occurs chiefly in youth & adult life, attacks being met with most often between the ages of 15, 25 and 30 years. But acute Rheumatism is rarely met with in childhood, with some of its severest complications. One attack predisposes to another, as one who has experienced an attack in youth will be apt to have subsequent ones in after life. Whilst one may get a man living over 25 without an attack, this liability

to the disease is proportionally lessened. The male sex seem to be more predisposed to the disease than the female. This is probably due to the fact that men are more exposed to the exciting causes of Acute-Articular Rheumatism and not that women possess any special immunity to the disease.

Certain diseases predispose it, as during the desquamative stage of scarlet fever and during the puerperal state, attacks in all respects similar to acute rheumatism sometimes occur. Scarlet fever predisposes to it in two ways, by checking the action of the skin and of the kidneys. Climatic

influences effect the prevalence of acute rheumatism as it is most often met with in humid, changeable climates, as in many parts of the temperate zone while it is quite a rare disease in the torrid and frigid zones. Rheumatism is especially common among those who are much exposed to inclement weather and in the poorer classes, who are anaemic ill nourished, poorly clad and live in low, damp apartments. It occurs quite often in a class of obese subjects who are accustomed to the use of malt liquors. Sudden exposure to cold and wet when the body is warm and in the prespiring

state, lying between wet sheets all night and damp places of abode are exciting causes where the predisposition already exists to the disease.

The true materies morbi of the disease is most probably an excess of lactic or sarco-lactic acid in the blood. Sarco lactic acid and the acid phosphate of potassium are normally produced in the body during muscular exercise, the latter probably taking some part in the disease also.

Any agent which will check their elimination will necessarily cause an accumulation of it in the

blood which may precipitate an attack of rheumatism.

This theory is strengthened by the fact that the medicinal use of lactic acid as a remedy for diabetes has, in various instances, and to all appearances caused a rheumatic inflammation of the joints.

Symptoms: In most cases of Acute Articular Rheumatism the attack comes on suddenly, and has a marked tendency to occur at night. The patient has a distinct chill, or several slight chills, followed by fever, which rapidly rises to 102°, 103° or 104° Fahr., but in very

[illegible] cases the temperature may [illegible] as high as 108° to 111° Fahr., later in the career of the disease.

The pulse is increased in proportion to the temperature but [illegible] above 90 per minute; patient is generally constipated, has a coated tongue and experiences thirst & loss of appetite with pain in one or more joints, which is greatly aggravated on attempting to move them. On examination of the painful joint or joints we find them swollen, with increased heat, tenderness on pressure and with redness of the skin. In a small proportion of

cases the paroxysms may precede the local phenomena for a period varying from a few hours to two or three days. In not a few cases there is for several days previous to the attack certain prodromal symptoms, patient complains of stiffness, pain and soreness of certain joints; patient also experiences muscular soreness and often neuralgic pains, localized in the region of some important nerve. In this case also has thirst, anorexia, coated tongue, constipation, headache and wakefulness. In primary attacks the large joints are affected almost entirely, the

knee, ankle are perhaps the most frequently affected in the beginning of the attack; next in frequency is the wrist, elbow, shoulder, hip. The phalangeal articulations and symphysis pubis are very rarely attacked. The small joints of the hands and feet are sometimes affected in secondary attacks of rheumatism, but are the chief site for its hundred affections known as gout. The attack does not stop with the invasion of one or two joints, except in very rare cases, but several joints may be either simultaneously affected or follow in quick succession. One of its most characteristic features

since its tendency to migrate from one joint to another, so that at the end of the first week the disease may have visited six, ten or even twelve joints. While the joints first attacked are by this time easier and the inflammation, pain and other local phenomena have subsided or almost entirely disappeared. The number of joints attacked are extremely variable in different cases, but the order in which they are attacked seems to be governed by the pathological law of parallelism. That is corresponding joints on opposite sides of the body, as the knees or ankles, will be either attacked

together, or one soon after the other, and when this is not the case analogous joints may be attacked together, as the knee, elbow, or wrist and ankle. Swelling and redness are most apparent around joints not covered deeply by muscles, as the knee, ankle, wrist and elbow are generally proportionate to the acuteness of the attack. The swelling is due partly to a morbid increase of fluid within the synovial cavity and partly to effusion into the surrounding tissues. Redness is not apparent over the hip and shoulder but only over the more superficial joints. Pain is one of the most characteristic and constant symptoms and

is greatly aggravated by the slightest movement of the joints. The patient assumes the easiest position he possibly will permit; the limbs are half flexed, the feet turned a little inward, hands extended, fingers separated. Owing to the exacerbation of the pain occasioned by movement patient maintains one position as long as possible. In severe cases the joints are sometimes so exquisitely tender that even the weight of the bed clothes become intolerable. A slight jar of the bed or even that caused by walking heavily over the floor, occasions suffering, and a change in the decubitus is

attended with the most excruciating pain.
All cases of Acute Articular Rheumatism
are accompanied with more or less fever;
in mild cases, without complications, the
fever is slight consisting of an evening ex-
acerbation with freedom from an increased
body heat at other times of the day. In the
more severe cases there is fever of the remittent
remittent type, the exacerbation coming
on in the afternoon. The maximum
rarely exceeds 104° Fah.; the usual
temperature being from 100° to 101° in the
morning and from one half to one degree
higher in the afternoon. The daily
range of morbid heat is not always
uniform, nor is it found in every case

be in proportion to the number of joints affected, or the intensity of the rheumatic inflammation. Rarely a complete intermission takes place in the course of the disease, which is usually followed by an exacerbation of all the symptoms with the return of fever; fever terminates gradually and not by crisis. The patient's mind is usually clear, but delirium is sometimes present and if it continues during the day it is of grave augury as it may be caused by extension of the rheumatic inflammation to the meninges of the brain.

In exceptional cases violent delirium may come on, followed by coma, or coma without delirium with an icter-

[illegible]. The temperature rising from 108° to 111° [illegible] in spirit-drinkers, and the chachetic when they are attacked with rheumatism.

The patient becomes [illegible] from destruction of red blood cells and often has an [illegible] [illegible] blood [illegible].

Sweating is generally a [illegible] symptom. The sweat [illegible] and [illegible] the [illegible] patient. In connection with the [illegible] [illegible] are apt to appear on the neck and trunk. Bowels are generally constipated but diarrhoea may occasionally be present. Urine is diminished in quantity, is [illegible] with a high specific gravity and is [illegible]

colored. On cooling urates are deposited and owing to the increase of coloring matter in urine the deposits are of a reddish color. This deposit is not due to an increase in the amount of uric acid or urates in the urine, but to the fact that the watery elements are removed and urine is in a more concentrated form. The chlorides of the urine are sometimes deficient, and the urine is occasionally albuminous. Convulsions, or what in this case it would probably be altogether correct to consider as local manifestations of the disease other than in the joints as they are brought about by the same internal determining cause. The most frequent manifestations of these are the lower complications, such as colitis

and pericarditis. Endocarditis being the most frequent, and is, as a rule, limited to the membrane lining the left cavities of the heart and it affects especially that portion of this membrane situated upon the mitral valve. Pericarditis is less frequent, and as a rule, when pericarditis becomes developed endocarditis coexists. Other frequent complications are bronchitis, pleurisy, and pneumonitis, and even peritonitis has been developed in the course of this disease, it may extend to the meninges of the brain causing cerebral meningitis.

Pathological changes:- The changes within the joints are slight in comparison with the amount of pain and other symptoms

The synovial membrane is injected more or less deeply and from a pearly, transparent, smooth membrane, it is changed to a cloudy and granular membrane.

The synovial fluid is increased in amount and changed in character; instead of being a transparent homogeneous viscid fluid it becomes thin, watery and redish from extravasation of blood and somewhat turbid from the presence of fibrin and puss cells. The amount of red blood cells and puss cells present in a simple rheumatic inflammation of the joints is never very great unless caused by some other disease, as the hemorrhagic diathesis or some disease predisposing to suppuration. Rheumatic

endocarditis and pericarditis differ in character from rheumatic arthritis in the exudation of fibrin; this so called exudation may be to some extent deposited instead of being entirely exuded. In the blood we find the amount of fibrine increased, it is sometimes increased up to as much as 10 parts of fibrin to 1,000 of blood. The red corpuscles are diminished. The low waters morbi is yet to a certain extent. Sub judice the most approved theory now is that the disease is due to an excess of lactic acid and acid phosphate of potassium.

Diagnosis. - A well developed case of Acute Articular Rheumatism can scarcely be mistaken for any other disease, unless it be

some of its kindred affections, as acute neural
gout, rheumatoid arthritis, hysterical
joint and pyaemia affecting the joints.
May be diagnosed from pyaemia by
history of some wound by the irregular fever
and sweats, which have a peculiar sweetish
odor, by the prostration and by suppuration
and disintegration of the joints, which are
not characteristic of rheumatism. Diagnosed
from gout first by the situation of the
inflammation. The local manifestations of
gout occur preferably in the smaller joints,
while rheumatism attacks chiefly the larger
joints. The febrile movement is less marked in
gout than in acute rheumatism. The tendency
to heart-complications is not present in gout.

Deposits of urate of soda in the fibrous tissues around the joints, and in cartilage take place in gout and do not in rheumatism. Uric acid is morbidly increased in the blood in gout. Rheumatoid arthritis is chronic, relationary and free from constitutional disturbances, as fever, pain at and hysterical joint is generally found in women and in the knee joint. It is without swelling or fever, and when the patients attention is not directed to it can be handled even roughly. The so-called gonorrhoeal rheumatism usually affects but one joint, does not migrate, is slow to recover, and the association of gonorrhoea or gleet points to the affection.

Simple synovitis may be difficult to

diagnose from rheumatic arthritis. The inflammation being confined to a single joint, which is rare in rheumatism. The pyrexia being out of proportion to the local inflammation, and in some cases preceding it in rheumatism. The duration of the local affection is longer and the swelling & redness is greater in cases of acute synovitis.

Prognosis: In Acute Articular Rheumatism the prognosis is very good, as to cure from the present attack. When death does take place in the career of the disease it is apt to be due to complications. In a mild case where less than six joints are affected it has a tendency to get well in from 13 to 15 days. When from eight to twelve joints are affected

the attack will scarcely be shorter than from 21 to 36 days.

Although regarded by some as a self-limited disease, the lengths of attacks are very variable, and may be mitigated by treatment. So the disease does not in all cases make a continuous march from beginning to end, but fluctuations may be noticed in all symptoms, not unfrequently when the joints first attacked have apparently convalesced do we find the local manifestations, and the hyrexia again renewed with perhaps as much or more intensity than at the beginning. Complications may cause it to be prolonged indefinitely Rheumatism in all cases is quite a serious disease, not from the immediate danger of

death, but from the liability to heart compli=
cations. It often lays the foundation for a grave
and incurable lesion of the heart. The patient
often being unaware of his trouble until after a
lapse of several years, when he becomes an
invalid and his days are cut short from its
effects on his circulatory system.

Pericarditis, which is in nearly all cases
accompanied or preceded by endocarditis,
is perhaps the most common cause of death
in rheumatism, but the majority of cases
in which pericarditis occurs do not terminate
fatally. The inflammation may rarely become
ulcerative and involve the muscular structure
of heart, causing myocarditis and possibly give
rise to pyaemia. Rheumatic inflammation

rarely attacks the meninges of the brain and causes death by meningitis. Life may be suddenly extinguished by an embolism being carried to the brain from the left cavities of the heart, arising from detachment of a part of the fibrinous exudation or deposit on the valves

Pulmonary complications rarely prove serious. Intense higher hyperpyia is sometimes a source of danger. The disease will terminate by a gradual lowering of temperature and diminution in the swelling and redness, joints will be more or less stiff for some time after the attack but they are seldom permanently injured.

In a very small proportion of cases Acute Articular Rheumatism may terminate in

the chronic form.

Treatment:— Granting the lactic acid theory to be the true one in regard to the cause of the disease, rational treatment would suggest the use of alkaline remedies, and in them do we find the most potent remedy for the disease. The alkaline treatment diminishes or almost completely destroys the tendency to heart complications. It is stated that twenty per cent. of all cases not treated will have endocarditis, and fourteen per cent. will have pericarditis (Bamburger).

Whilst it is stated that out of 439 cases subjected to the alkaline treatment there was not a single death, and only a little over two per cent. suffered with heart complications (Fuller).

The average duration of these was also but eleven days, thus showing that the alkaline treatment really does lessen the tendency to heart complications and shorten the career of the disease.

The alkalies generally used are the bicarbonate of potassium and the bicarbonate of sodium; bicarbonate of potassium being preferable. To be effectual the remedy must be given in large doses and often repeated. Give thirty grains of bicarbonate of potassium every three hours until the urine becomes neutral or slightly alkaline; after this takes place the dose should be diminished and only be repeated once or twice a day. It should be freely dissolved in water, and the dose may be rendered more pleasant by the addition to it of a little citric acid or lemon juice, and

drinking it while effervescing. The urine should be often examined and if it should become acid again in the course of the disease the use of the alkalies in full doses should be again resumed. For their diuretic effect small or the acetate nitrate or bicarbonate of potash may be added to the proper alkaline remedy. Salicylic acid and salicin undoubtedly have the effect of promptly relieving some of the principal symptoms of the disease. The temperature is reduced and with it the pain, under their free use this result is generally brought about in from 24 to 48 hours. Salicylic acid is more active than salicin, but is very irritating to the mucous membrane of the stomach and throat, hence it is generally employed in the form of salicylate of sodium, although the salicylate treatment acts well, it should not be relied on the exclusion of the proper alkaline

remedy. The use of salicylates is open to some objection as it causes great depression of the heart's action and sets up irritation of the throat and stomach. It does not prevent heart complications except by shortening the duration of the disease. When the pyrexia is relieved by their use it has a tendency to recur. When the patient is very feeble and anaemic, the continued use of the alkalies and salicylates will have a happy effect on the disease. A good plan of treatment is to give them in alternate doses, with the dose of each to be repeated every three hours. To begin treatment give 30 grains of bicarbonate of potassium, at one hour and a half later give 20 to 25 grains of salicylate of sodium and have the dose of each repeated every three hours. At the end of 24 hours treatment, the salicylate should be left off and the alkali should be continued until

the urine becomes slightly alkaline. Should intense hyperkyrexia come on one would not trust to the salicylates, but resort to the use of the hydrobromate of quinine hypodermically.

In any case of rheumatism where the fever seems to have a periodic character the use of five grain doses of the sulphate of quinine three or four times a day will have a happy effect. When patients are lean, weak and anaemic, the tincture of the chloride of iron should be given in full doses, and it may be well in all cases when the acute symptoms have subsided to give tincture of the chloride or some other preparation of iron in combination with a bitter tonic. Some opiate or other anodyne should be given to relieve the pain, restlessness and inability to sleep. Thirst may be relieved by the free use of water or lemonade. Constipation of the bowels

which often exists should be relieved by some aperient, as a dose of one or two compound cathartic pills. Milk "gruels" and the like make the best diet for the patient. Patient should be kept in a room of an even temperature and should be carefully protected from sudden changes of temperature or cool draughts of air. Local treatment consists chiefly in protection of the joints by means of cotton batting covered with oiled silk or some other appliance of the kind; coverings may be saturated with an alkaline and anodyne solution or some other anodyne liniment may be applied. Blistering does not seem to avail much in the acute stage, but when it has subsided to some extent small blisters about the size of a half dollar applied successively around the joints will assist in removing the swelling, and will also relieve the pain. Flying gum is one

preferable, as it will be necessary to apply several and they will not be so disagreeable to the patient.

W. A. Monroe.

Nelson Peck.
Typhoid [illegible]

Typhoid Fever.

Typhoid Fever is synonymus with Enteric, Slow Nervous Fever, Gastrointestinal Fever, Infantile Remittent, Abdominal, Typhus &c. It is a long Continued Fever of a low type with inflamation and Ulceration of intestinal glands, and a specific lesion.

Clinical History.

Usually begins insidiously. Prodromata, are lassitude, want of interest, Chilly sensation, dullness, lubitude, Epistaxis, pain in stomach and lower bowels, frequently there is nausea and looseness of the bowels. These symptoms last three or four days, then high fever, tongue furred, skin hot, increased diarrhoea, distended Abdomen, up

to the 7th day. Second week there is frequently an eruption on the chest or abdomen, may be on the back also, which disappears on pressure to return again. The fever gets higher, there is marked headache, all nervous symptoms are agravated. This condition continues until about the 21st day when the patient is much worn out, his nervous system is in a pitiable condition, he is often as helpless as an infant, and the disease ends in recovery or death. After the 14th day, if the case be a bad or severe one, Coma and other severe nervous symptoms, such as subsultus tendinum, delirium &c, may supervene.

The Case may end in one week, with nausea, vomiting, diarrhoea, delirium and no eruption, nor special symptoms. Skin hot and dry, perspiration acid. sweats may last till convalescence has terminated in health. occasionally, there is flushed cheek, apt to be on one side at a time. Temperature is marked and significant - There is usually gradual rise until from the 4th to the 7th day of from 1° to 1½°, when the maximum is reached in moderate cases. It is then stationary, until about the 12th day, at 103°, after the 12th day, morning and evening temperature varies from 2° to 3°. A sudden fall of temperature, that is from a

high temperature, as a rule, indicates intestinal hemorrhage. If the temperature keeps as low 105°, other things being equal, the case will most probably terminate in recovery. Temperature 105°, bad case, 106°, dangerous, 107°-108° fatal, as a rule. The temperature may be higher in the morning than in the evening, this however is rare. Pulse usually, very tense, soft, compressible. If very rapid is a dangerous symptom. The average is 120 pulsations per minute; it may be as low as 60. Cardiac symptoms: there is often a very weak first sound of the heart, this is diagnostic. Physognomy the eyes are heavy, there is often a vacant stare and stupid

Expression. Digestive and Abdominal Symptoms: Tongue Covered, at first with a light fur, afterwards dry brown and glazed, cracked and bleeding in bad cases. Exceptionally the tips red. There is sometimes a white tongue heavily coated, and sordes on gums and teeth. There is rarely much sickness of the stomach. Intestinal Symptoms usually marked-diarrhoea, stools fetid, often yellow, large and diffusive. There is pain aching or tenderness on pressure in right Iliac region, sometimes in the left. Gurgling sounds on pressure in the right Iliac. Tympanites is not an early symptom, usually occurs during

the second week. This varies in extent, it may be so slight as to be scarcely discernable, or it may be so extensive as to interfere with the movements of the diaphragm. There is frequently enlargement of the spleen and increased splenic dulness, dulness under percussion. Epistaxis is usually absent in the milder cases. Nearly always present in grave cases, it marks more than an ordinary bad case.

Pulmonary symptoms: There is usually bronchial catarrh, as evinced by loud bronchial rales which are more loud and distinct than in ordinary bronchitis or catarrh. There are also sonorous sounds. The

Eruption is very significant but not invariable. it is absent in 12% of the cases. it is lenticular rose colored and found over the chest and abdomen. from one to twenty spots, not diffused, slightly raised above the surface, they appear in succession crops. is not found post mortem, - some times the spots are sometimes found on the back only, or on the face - the eruption appears from the 7th to the 10th day. in cases of relapse the spots always return immediately. Sudamina or sweat spots deserve no attention. Nervous symptoms. headache is often an early symptom. sometimes so severe as to mask all other symptoms, as a rule it

becomes marked during the second week in this class of cases, and we have dullness of mind, stupor or extraordinary vigor and restlessness. the delerium may be low and muttering, or fanciful. and this is not an early symptom, but occurs late in the disease. in some instances this delerium is furious, as I have seen my-self in practice. this furious from has caused suicide. this form may come on early in the disease. The muscular system in very weak patients usually lies quiet. in gran cases there is subsultus or twitching of the muscles, the special senses may be perverted, patient has,

roaring in his ears, is deaf, not the result of quinine, when given vision is some-times perverted. there may be inability to pass urine. Complications: Pneumonia, hypostatic, caused by lying so long in one position, or it may be true congestive. it is usually owing to imperfect aeration of blood. intestinal hemorrhage - not always fatal, sometimes proves to be a relief to brain symptoms. this is rare however. Hemorrhage is a very bad symptom, hence should be stopped if possible. a sudden fall of temperature from a 103° to 98° is a precursory symptom of hemorrhage. Peritonitis with or without previous hemorrhage in most cases

proves fatal. It may occur either local or general, when ulcerations of coats of the bowel extends deeply towards peritoneum, the membrane highly or rather more deeply inflamed in places corresponding to the base of the ulcer, and from these circumscribed patches of infiltration. the increased vascular action may spread and involve the peritoneum more generally, and produce considerable serous effusion. perforation is occasionally prevented by the adhesion of the inflamed patch to neighboring coil or coils, and if it should after this adhesion of the inflamed patch has been affected, a circumscribed abcess

which may ultimately discharge
its-elf into the bowel, is formed.
Perforation frequently occurs under
under less favorable circumstances
and the fecal matter is extravasated
into the peritoneum or peritoneal Cavity.
Sudden increase of pain accompanied
by vomiting and soon followed by Cold
Clammy sweats and Collapse announces
the nature of the accident. Sometimes
sudden Collapse alone is the only
indication of this fatal issue.
Milk leg, so Called, Caused by plugging
up of the large veins, usually occurs
but takes a long time to Cure. This
may be the result, or a secondary Complica-
tion after abortion in Typhoid Fever.

Morbid anatomy: the solitary glands suffer most in Children. Peyer's patches most in adults. there is pure swelling of glands covered with mucus membrane. they are usually red and varied. there are increasing gland elements. some think it due to a specific deposit — a typhus deposit. about the 11 or 12 day the swollen glands soften, then the mucus membrane softens. at its margin, about the 16 day, the sloughs form and come away, leaving clean ulcers.
The cicatrization begins about the 20 day. the upper bowel is healthy, the the mesenteric glands enlarge but do not ulcerate. they sometimes take

In a cheesy condition ulceration may be clear through, though it usually extends through muscular coats. At a distance of four feet from the Ileo-caecal valve we shall generally find Peyers glands in their normal condition, six inches nearer the valve we may find one in the earliest stage of inflamation. it is slightly swollen and raised above the general level of the surrounding mucous membrane, and is a little more vascular than in health. probably in twenty four hours after the first manifestation of the disease, this condition may be found in the Peyers patches. during the two weeks they begin to ulcerate,

that is the mucus membrane dies and sluffs off; the ulceration, or ulceration process will sometimes only extend through the mucus membrane. The spleen is greatly congested in almost every case, probably during the inflamatory stage or period of the disease in every case. The spleen is usually enlarged to twice or thrice its natural size, occasionally it is found four or five times larger and heavier than normal. its color is uniformly purplish black, and is so soft and friable that it may be reduced to a semiplexid pulp. No constant stomach symptoms. Stomach

Duodenum and Jejunum are usually healthy, in some cases they present morbid conditions, such as softening and minute ulceration of the mucus membrane, which are common to all inflamatory diseases. Blood is poor and fibrin lessened. Red corpuscles decrease, and are irregular in shape. White corpuscles increased, the blood is apt to become dark to the eye. the Heart muscles are granular, there is no specific brain lesion, there may be however some slight effusion into the subarachnoid membrane, fullness of the bloodvessels, and slightly increased vascularity of the cerebral substance.

Causes, Predisposing and Exciting.
Predisposing-Age the Chief Cause.
It is a disease of young adults from
18 to 25 Years. Very little difference in
Sex. It is said that a hot dry Autumn
increases the liability. The Exciting Cause is a
Special Typhoid germ. It seems to
result from the decomposition of
Typhoid Excreta. It is Claimed that
a Specific, Typhoid Bacillus has been
discovered. Contagious only to such
the decomposition of the Evacuations
of the human body. This Bacillus Exists
all the time, but requires a certain
soil for its development, such as
sinks, cesspools, and an individual
dying of Typhoid Fever and laid near

a spring, and the water may become inhabited by these germs, then washing milk vessels with this water may produce them in the milk, then the disease brought on through the use of the milk

Diagnosis

Early symptoms: general malaise, headache, the patient complains of feeling tired, loss of appetite, chilliness, usually refered to the spine first, pain in back and limbs. Epistaxis frequent. Some times nausea and vomiting - Looseness of the bowels is generally an early sympton, though the bowels may be constipated for a week: then the indications of

of inflamation and ulceration of Peyers patches, pain and tenderness in right Iliac fossa and general derangement of the Alimentary Canal; accompanied by diarrhoea, light Ochre Colored stools, very offensive, hectic fever, gradual rise of temperature, tongue coated, at first with a light frosted coating, afterward becomeing thicker and darker forming a brown coating with red tips or Edges, some times indented with the teeth, indcateing ulceration - some times the tongue becomes dry and glazed - sordes form on the teeth and gums. The diseases which are mostlikely to be confounded with

Typhoid fever are Typhus, Miliary Tuberculosis, and Chronic Tuberculor-Peritonitis. There are other diseases bearing some resemblance to Typhoid fever. —
In Typhus, the minor elements of distinction are; the nature of the fever prevailing in the same house, and the comparative immunity of old people from Typhoid. In Typhoid the invasion symptoms are far more insidious than in Typhus. Rigor and headache are less marked in the early stages of Typhoid. Epistaxis very rare in Typhus. The Eruption of Typhoid appears latter than that of Typhus — the Eruption is rarely met with in Typhoid before

from the 7th to the 9th day. But the most essential difference between the two Eruptions is that the petechial or mulberry spots of Typhus come out in one single crop, while in Typhoid fresh spots appear day after day, and each spot or crop of spots last only 3 or 4 days - Then these spots are lenticular, Rose Colored.
Chronic Tubercular Peritonitis presents many of the symptoms of Enteric fever. Hectic flush, pinched features, abdominal pain, tenderness, enlarging and distended as common to both diseases, but in Tubercular Peritonitis the tongue is clean and moist. There is no Eruption and

frequently the abdomen is distended with fluid Effusion, and there may be evidence of Tuberculous deposit in the Lungs. In Miliary Tuberculosis - the heating is much increased and the temperature will rise during the sickness to 106° or 107°, which is not the case in Typhoid fever. Rales are heard all over the lungs in Miliary Tuberculosis, while they are only heard at the base of the Lung in Typhoid and fall of temperature indicates hemorrhage - and a sudden rise of temperature indicates some complication. Most likely Pneumonia. In some cases the Parotid glands take

an explanation, as I saw one in one case which proved fatal.

Prognosis

The prognosis in Typhoid fever should be guarded as the worst accidents of the disease sometimes occur when all seems to be going on well. A pulse continuously frequent, with much heat or obstinate diarrhea are very unfavorable symptoms. A fatal termination must also be anticipated if the stupor or delirium becomes continuous and associated with muscular twitching. The delirium sometimes assumes the traumatic character, or the patient

becomes obstinate as well as
clinical. such features also form
bode an unfavorable issue
Complications which render the
prognosis grave are Pneumonia,
intestinal hemorrhage, Peritonitis
and perforation of the bowel.
death sometimes comes on from
Cardiac debility. The mortality
is about 20%. In uncomplicated
cases, however, the prognosis may
be considered favorable.

In mild cases when the temperature does not exceed 102½° - 103° F., little or no medicine is needed. Good hygienic regulations - Keep the room at 55° - 60° F. - this low temperature is a very important point this substitutes a bath - remove all carpets, blinds and woolen fabrics from the room, as these woolen fabrics seem to hold the fomites and interfere with the hygienic measures. It is best to not allow much company in the room. Restrict diet to fluids of which milk in some form is the best - Alcohol - along with the milk if indicated. Beef tea may be used occasionally. We may vary the manner of giving the

milk — give either sweet milk or butter milk — or Koumiss. Take a clean beer bottle, fill it with sweet milk, and add tablespoonful of sugar with 1/8 of a yeast cake, put in a warm place for 6 hours and then put on ice for 3 hours, and it is ready for use. White of Egg diet. Beat up the white of one Egg with ℥ 10 of water slowly added — strain through a muslin cloth, add a little sugar, and brandy ℥i — and it is ready for use. Typhoid can not be aborted. we may guide the disease alongth recovery. No malady depends more on judicious treatment. When the temperature becomes high it suggests the antipyretic treatment, as, this

high temperature Exhaust the patient rapidly - we should resort to Quinine and Cold bath, or Spongeing. If the temperature is above 103°F. during the first or second week place the patient in a bath of 70° - 75° F. now If the temperature fall in two or three minutes to 100°F., take out; wrap up after drying -, but If the temperature falls more slowly, leave the patient in the bath for 10 - 20 or even 30 minutes. not advisable to use more than 3 or 4 Cold baths. try spongeing. If the bath is too severe. dont use the bath after two weeks. watch the effect of Each bath Carefully. If the patient is less restless, sleeps

good; the bath does good and may be repeated if necessary, but if the pulse feebler, skin husky and respiration hurried and heart weak it does harm. Often when the patient is too weak to be put in a bath, sponge one extremity at a time, and wipe dry before sponging further. Dr. Chew thinks advisable to use ~~to use~~ the Lumine and the Cold bath together - the Lumine keeps up the effect. To reduce temperature it must be given in large doses. When the temperature is from 103°-105° give from xv—xx gr at once in 4 or 5 hours the temperature falls and stays down for 8 or 10 hours, then if it

rises again, repeat the dose, or even
x gr. may be sufficient - Hypodermatically
the Hydrobromate of Quinine gtts xx v - xxx
may be used - (gtts xx = 4 g.) the Dil
H.Cl is very beneficial. we do not
know its action in the body. It is
the natural acid of the Gastric
Juice and aids digestion, and the
diarrhoe seems to be modified by it;
also, the hard, dry, brown coating
of the tongue is relieved. the dilute
officinal must still be further
diluted - dose x - xv gtts in ℥ij water -
Diarrhoe. If not more than 4 or 5
stools in 24 hours - it is not necessary
to interfere - it is eliminative. this
refers to the first two weeks - later

It does harm by weakening the patient. So after the 2ove week should be checked - Opii is well adapted. If the stomach is not irritable Copper and Opii - appear to stimulate, as, well as, check the diarrhoe. When the tongue is dry, brown and glistening - turpentine in the following manner: R. Oil Turpentine ℥iss
Mucil Acacia ℥iss
Syr. of Lemon ℥iss M.
Teaspoonful every 4 hours. For tympanitis, turpentine may be used Externally - during Convalescence avoid much Exercise. Keep on liquid food principally until stools become solid. The delerium should be

treated with Opii. small doses of
Morphia 1/18 gr. and repeat at intervals
of 15 to 20 minutes until 1/4 g. has
been taken unless the patient becomes
quiet on the first or second dose.
The Effect of the first dose should
should be Carefully watched. If the
delirium is mild. Potassa Bromide and
Chloral Hydrate - the Chloral is not
adapted to Cases with a weak heart.
If the Chloral Can be used it seems
to do good in two ways - acts on
the Nervous System and diminishes
the Alkalinity of the blood. If
perforation takes place we suspect it by
intense pain, Knees drawn up
abdomen more distended than before,

pulse steady and very feeble in some cases. Peritonitis - if by a Continuity of inflamation. most cases die when perforation takes place - when we suspect perforation we should use Opii to lessen the action of the intestinal Canal - Hemorrhage, during the 1st or 2nd week, if moderate, may not require any special attention. but if it occur in the 3 week - it should be checked if possible - Opii - Gallic Acid, turpentine Cold to right Iliac region - Confined. Ice in a bladder. one Change every 15 or 20 minutes - a weak first sound of the heart Calls for stimulants - although Alcohol should not be used as a routine treatment - we should always note it

effect of the first dose. If the pulse increase - the temperature higher, flushed face - all denote that the Alcohol does harm - then supply with more good food, and give Carbonate of Ammonia in 4 or 5 gr. doses - but if the pulse and temperature - Come down under the use of Alcohol, we have reason to Continue the same - but it is not Called for by any means in all Cases. Keep the temperature of the room down to 55° or 60° F. Plenty of pure air, remove the evacuations from the room, disinfect. If the Milk dont agree with the stomach, Boil - and add lime water - ℥iss to the ℔j of Milk - If Pneumonia become a Complication, Stimulants and Ammoi Carbonate may

be Called for. If the Pneumonia is of the hypostatic type you will change the position of the patient often. Bed sores wash the parts with Camphor or Brandy to harden - take off pressure as much as possible. If ulceration has taken place use Acid Carbolic, gr v, water ℥i -, apply; and Balsam of Peru. If Constipation Exist you will usually in an Enema. If this dont suffice, it might be well to give ½ or ¾ gr of Calomel. If Femoral Phlebitis should occur and the pain severe - apply poultices - and wrap the limb in Cotton wool - give Opii If the pain is severe - but this Condition seldom ever occurs.

Ventilation in Health & Disease

by Elmer J. Hubbard, L.M.D. of Md.

Nothing is of more importance to the maintenance of health and prevention of disease as a constant, continual and complete change of air so called Ventilation. The principal constituent of the air upon which health and life depend is oxygen, in the performance of respiration it is inhaled into the lungs, enters into the circulation and aids in the destruction of all those matters which are dangerous to animal life. A healthy man will inhale about two hundred and sixty cubic feet of air in

the course of twenty-four hours; of which from twenty five to thirty seven ounces consist of oxygen; and while this is being inhaled an exhalation of from ten to fifteen feet of carbonic acid gas ensues or from eight to ten ounces by weight.

The quantity of carbonic acid gas passed off is proportioned to the amount of oxygen inhaled, when there is a deficiency of oxygen supplied to the system there is a retention of carbonic acid in the system which will invariably produce disease. The decomposing influences of oxygen upon the effete or waste matter of the system gives

rise to various results; thus the blood which is conveyed to the lungs through the veins is dark colored and filled with impurities and is recognized as venous blood, but as soon as oxygen has come in contact with it, the impurities are destroyed or disintegrated by the red corpuscles having a greater affinity for oxygen, when it is passed off and the blood becomes a bright red color and highly purified nine pints of pure air is said to purify four pints of blood and impart to it a power which gives heat and activity to the whole system.

Some idea of this vital process

may be had when it is stated that
about nine pounds of blood are
presented to the atmosphere in the
lungs for oxygenation every minute;
the quantity of blood estimated
in the adult system is about twenty
eight pounds, which performs its
revolution in two minutes and a
half, or in other words the circulat-
ing velocity of the fluid is so
great that every ounce amount on
leaving the lungs is distributed
to impart heat, health, and activity
to the system as well as to remove
impurities, and in the short
space of two minutes and a half
it returns to the lungs laden

with [illegible] impurities and dump-
-ing it as it were to the outer world.
All living creatures must breath
oxygen or death will speedily
and inevitably take place.
Pure unadulterated air holding
about twenty one per cent of oxygen
is as essential to the proper vital-
-ization of the blood, and the healthy
action of the lungs as well as
all other organs as is good whole-
-some and nutritious food to the
formation of chyle and the
normal action of the digestive
organs. From these facts it is
very evident the inspiration of
air containing foreign matter

substance must be detrimental to health and longevity in proportion as its purity is departed from. The influence of the condition of the atmosphere upon the system is well known by those who have felt the refreshing and exhilarating effects so instantaneously occurring upon passing from a deteriorated city atmosphere to the pure unvitiated air of an open country. While on the other hand but few country people prefer a residence in cities from the depressing and unpleasant sensations experienced almost as soon as they begin to breath the contaminated

atmosphere of such places; although persons in the enjoyment of vigorous health may not observe the various changes which occur in the atmosphere from time to time, yet they are always noticed and sensibly felt by the invalid, as one great means therefore, conducive to health and long life, it is highly important that individuals should be extremely careful how they expose themselves to the influences of unhealthy air, or they permit to think too much attention cannot be bestowed. Statistics prove beyond a doubt that the attention of Typhus, Cholera, Yellow fever

and other fatal forms of disease is promoted by the vitiated air of low and damp situations, and the prevalence of these maladies is still further augmented when to vitiated the unhealthy animal exhalations which are continually passing off from the body, are allowed to accumulate through the atmosphere as may be witnessed in hospitals and other places where individuals are congregated together in small apartments imperfectly ventilated, monkeys and other animals that have been kept in low damp places and fed with bad food will have tubercles developed in some portion of their system

Langenbeck, the great German pathologist asserts that pulmonary diseases are almost entirely due to the breathing of foul air, the lungs of all persons he says, 'never imbibed, who work for some years in close work shops and dusty factories, show the germs of the fatal disease, while uniform inebriates who have passed their life in open air, have preserved their respiratory organs intact, whatever inroads their excesses had made on the rest of their system. Go into the business parts of our city today and see the young men who are working day after day in the

counting room, in which the sun rays have not shown since the roof has been nailed on, they receive light by the use of illuminating gas, they are prompt in the morning never late at night, when sooner or later they are attacked with a hacking cough which is soon followed by pallor and night sweats, when alas they are informed by their physician that they are in the jaws of that much dreaded and fatal disease. "Great cities" says "Prof. Stephen Smith of New York" are today the destroyers of the race, if it were not for the accessions from the

century they would soon become depopulated".

In Amsterdam there is seventy one more deaths than births, that is to say, to one hundred births there is one hundred and seventy one deaths and would be depopulated were not the vacancies filled by people from other parts.

"A tenth of the people of the cities die of consumption says Prof Lancaster, sedentary life and inactivity, impure air, and the absence of sunlight in cities produce a fearful mortality from consumption. The exciting cause is so general as under consumption. Individuals, are very

apt to imagine that because they do not immediately experience the evil effects resulting from an inattention to the laws of health, that therefore they can continue their aggression with impunity, but all must remember that the mischievous consequences proceed slowly or rapidly according to the condition of the constitution, and the character of the excesses, and that sooner or later they will suffer the inevitable punishment of their folly and disregard, by the appearance of some form of disease which will not only interfere with the present enjoyment

of life, but were found known to
more or less speedily terminate that life.
All places where individuals aggre-
gate together in numbers, as Churches
theatres, ball rooms, &c, should be so
arranged that there may be kept
up a constant circulation of fresh
air, and to effect this there are no
better ventilators than large windows
and doors, the various plans of
ventilation by other means are of
little service in large and crowded
assemblies; the air of such places
is vitiated by the excessive consump-
tion of oxygen, and the augmented
quantity of carbonic acid exhaled
and diffused throughout the atmo-

-phere of the room. It is calculated that one thousand persons will in one hour consume four thousand hogshead of air, so that in crowded assemblies we soon have the evil effects of an air exhausted of its normal proportion of oxygen and poisoned by the exhalation from the lungs and skin as well as by fires and lights when these are used. The depressing sensations, the headaches, the faintings, the drowsiness which occur in crowded places are not owing as is generally supposed to the heat but to the inspiration of impure air. All rooms whether private or public should be well

ventilated daily, and the apartment of the sick should especially be furnished with a constant access of fresh air, it is more refreshing, more reviving, and more beneficial to them than all the medicine which may be prescribed for them without an attention to this one point. It is very pernicious course to place many persons in one sleeping apartment, and if persisted in the occupants will sooner or later suffer from disease, much of the danger may be obviated by allowing a free circulation of fresh air through the room during the night.

Plants generally give off oxygen through the day, and carbonic acid during the night, at the same time imbibing the oxygen, hence it is a dangerous and unwise practice to keep plants and flowers in the apartments devoted to sleep, beds should frequently be exposed to the air and sunlight. "The sun's rays not only prevent dampness and mustiness but they purify the atmosphere, says Prof. Donaldson. The vapor of sinks or privies is extremely disagreeable and unhealthy and [illegible] should be taken to decompose it. Air light [illegible]

in houses containing old rubbish should be dispensed with. Cellars should be carefully attended to especially in hot weather, they should be kept clean, ventilated often and be treated with some disinfectant. Fevers often of disease have occured in houses where although cleanliness was bestowed upon all that portion above the cellar, this was permitted to remain damp and accumulated foul and noxious vapors which originated the disease. Ventilation in disease; There is nothing that should engage the attention of the nurse

than proper and constant ventila-
tion of the sick room for without
this even especially in hot weather
the patient will suffer, yet the
doors and windows are not to
be opened at random, some pru-
dence must be observed that
the patient be not exposed to a
current or draft of air, so as
not to expose him to any danger,
not forgetting that when the
thermometer is low a room is
not on that account always
well ventilated, as the air in
a close room may be very impure.
Thorough ventilation can only be
effected with certainty by the

admission of a current of air through the sick room by doors and windows sufficiently opened, and for a sufficient time, taking care not to chill the patient. The window furthest from the bed may be kept constantly down an inch or two at the top having at the same time the blind, shutter, or a screen so arranged as to prevent a direct draught on the patient. To facilitate the removal of the foul air a lighted lamp may be placed in the fireplace or better a fire if the weather will permit may be made in the grate, this will

draw the foul air up the chimney
while the fresh air takes its place.
the notion that a sick room
can be ventilated by leaving the
entry door open is fallacious, for
only the stale air from the hall,
together with the house noises
come in by that door. When the
weather is cold the windows in
the adjoining room containing
a stove or otherwise heated may
be left open for the admission
of air. As pure air is the
most important agent in a sick
room to prevent it from becoming
foul every source by which it
may be deteriorated should

possible, instantly removed, such as evacuations &c. The bed clothing should be frequently changed, and no filth permitted to accumulate upon the floor, tables, or about the bed to deteriorate the atmosphere. It should be impressed upon the friends of the sick that the burning of coffee and sugar, or the sprinkling of perfumes in the sick chamber, does not disinfect nor purify the air, it is sinibly disguising and not eradicating, the best artificial means of destroying the unpleasant odors of the sick room is by having either Chloride of lime in solution four per cent or sulphate of copper in

solution five percent deposited in convenient vessels around the room.

Artificial Anaesthesia,
And Anaesthetics.

Respectfully Dedicated
To the Faculty of Physic
Of The University of Maryland

Artificial Anaesthesia and Anaesthetics:

Though usage has established the word anaesthesia which was first proposed by Dr. Oliver Wendell Holmes, the term analgesia according to the strict etymological signification of the word, would have better expressed that condition of profound unconsciousness which is produced by the inhalation of certain drugs. For this patent elixir mankind has sought, with the greatest diligence from the [illegible] ages. Each new found drug in its turn being brought to trial, and in its turn laid aside by the dis

appointed physician or sufferer; till the nineteenth century, with its inventions and discoveries lifts the veil from the hidden treasure, and gives to America the honor of shouting eureka. Though operations had never before been performed on patients completely anaesthetized, many of our most useful anodynes were used at a very early date, Alcohol & carbonic acid were used as early as the siege of Troy in assuaging the pains of injured men. Thus the venerable Nestor came to the relief of the wounded Machaon with a medicated poultice of cheese, onions and meal mixed with the wine of Pramnos" The Chinese in remote ages

learned the anaesthetic properties of an
urticaceous plant, which was probably
related to Indian hemp. The sleep-producing
effects of Carbonic acid gas were early
known among the Egyptians. But of
all the drugs that were known as anaesthetics by the ancients, mandragora seems
to have kept the first place. It was very
probably this mandragora wine mingled
with myrrh, which was offered to Jesus
on the cross. Herodotus first refers to
anaesthesia by inhalation, relating that
the Scythians were accustomed to produce
intoxication by inhaling the vapor of
a certain kind of hemp. As the knowledge
of physicians increased, the knowledge
of their experiments with anaesthetic drugs

diminished, at any rate the pain seems to have fallen into disuse, and at the close of the 18th century we find civilized surgeons limiting their efforts to the moderate use of opium and brandy. When Sir Humphry Davy's attention was drawn in 1798 to Priestley's nitrous oxide gas, he little thought he was then laying the basis of experimental investigations that were to form an epoch in the history of mankind, and to lead to the introduction into practice of a new power which has been the means of revolutionizing surgery. He had succeeded by its use in calming the pain that was caused by the eruption of a wisdom tooth, while experimenting at Clifton, and he

recorded his opinion in the following words:
"As nitrous oxide, in its extensive operation,
seems capable of destroying physical
pain, it may probably be used with advantage in surgical operations in which
no great effusion of blood takes place."
These words were widely read and experi-
ments were repeated, though with varying
results all over the world. Not till March
1842 was the first surgical operation per-
formed while the patient was completely
anaesthetized by the inhalation of sulphuric
ether, this honor belongs to Dr. Crawford
W. Long of Athens, Georgia. Horace Wells
a dentist of Hartford Conn. employed
nitrous oxide gas with an excellent
result in 1844. In 1846 Dr. Morton

etherized a patient, who had a venous tumor of the jaw, which was removed by Dr. Warren at the Massachusetts General Hospital. From this date the success of anaesthesia in surgery was placed beyond all doubt.

Chloroform was used in 1847.

The anaesthetics in most general use at present, are ether, chloroform, nitrous oxide, bromide of ethyl and cocaine the latter being used locally, the bichloride of methylene is also very popular in Great Britain, but has never been extensively used in this country.

The first effect of an anaesthetic vapor inhaled, is an impression upon the olfactory nerves. The sense of taste

is also excited by contact of the vaporous particles with the nerves of the tongue and pharynx, This first effect of local contact is soon succeeded by the more extensive results of general saturation of the tissues with the stupefying agent. Penetrating every part of the air cells of the lungs, it rapidly passes into the blood, and is conveyed to every living element of the body. The initial effect is disturbance of function; the subsequent effect is paralysis of function. General sensibility is exalted. The pulsation of the heart can be felt, and the vermicular movements of the intestines can sometimes be

perceived the nerves throb, the temples throb, waves of heat flush the surface of the body, the skin grows warm, perspiration forms upon the face, and sometimes becomes general; the pulse rises, respiration becomes accelerated, the pupils contract, the eyes close, reflex irritability is exalted, and the patient resembles in his general appearance a person in the earlier stages of alcoholic intoxication. To this period of excitement succeeds the stage of diminishing function. The sensibility of the surface grows less, the temperature falls, the pulse begins to recede toward the normal standard, the blood pressure di-

minutes; the movements of respiration follow the same course, and finally become deep and full, like those of profound sleep; voluntary movement ceases; consciousness gradually fails, reflex movements are abolished, and, after a period characterized perhaps by less and less active attempts at speech, the patient lies immovable, and without power of voluntary motion. If the action of the anæsthetic is urged beyond this point, the palatal, buccal and pharyngeal muscles yield, and respiration becomes stertorous; the action of the heart is enfeebled, the countenance grows pallid; respiration becomes irregular, or

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ceases altogether, and death may ensue.
How anæsthetics act upon the body
is not yet determined, although it is
tolerably certain that the ultimate result
is absolute paralysis of the nerve centres
cerebral and spinal. To this end a
patient passes through the stages
enumerated above, the brain losing its
power before the spinal cord, absolute
paralysis and anæsthesia existing only
when both nerve centres are completely
under the influence of the inhaled
drug, the nerve supply of the respiratory
and circulatory systems alone excepted.
Indeed it is upon this fact that the
practical value of all anæsthetics is
based, the surgeon aiming at producing

paralysis of the muscles of the trunk and extremities only, and not those of the respiratory or circulatory systems. In a general way there is a wide interval between the two stages; in exceptionable cases this interval is abridged; in such cases the heart and respiratory systems suddenly become affected, and it is under these circumstances that sudden death takes place.

Anaesthesia is the result of the local action of the anaesthetic upon the individual elements of the organism. Ether abolishes the functions of the nerve cell, in precisely the same way it abolishes the functions of the plant cell. This arrest of function is probably due to the

some properties by which the anæsthetic interferes with the reaction which would otherwise take place between oxygen and phosphorous in the inorganic kingdom. The sensory apparatus succumbs to their influence sooner than the motor, It is the rule that the anæsthetic paralysis of anæsthesia advances from below upward, invading the peripheral organs first, and only invading the movements of respiration at the moment when the medullary centres are overwhelmed, It is in the medulla oblongata that the power of vibrating molecular motion is most completely organized, Consequently the movements of respiration, and the

central of the circulation, being directly dependent upon the quality of the nerve substance in the medulla, persist after the cessation of all other motor functions in other portions of the nervous system.

The respiratory centre is the ultimum moriens in all cases of death from the administration of anæsthetics.

Paralysis of function advances from the cerebral periphery downward, and from the sensory periphery upward, until at length the "vital knot" is loosed and death occurs.

Rules Relating to the Administration of Chloroform, or other Anæsthetics; as given by the Chloroform Committee of the Royal

Medical and Chirurgical Society of London, 1864.

Chloroform should on no account be given carelessly or by the inexperienced; and when complete insensibility is desired the attention of its administrator should be exclusively confined to the duty he has undertaken.

Under no circumstances is it desirable for a person to give chloroform to himself.

It is not advisable to give chloroform or any anaesthetic after a long fast, or soon after a meal, the best time for its administration being four or five hours after food has been taken.

If the patient is much depressed, there is no objection to his taking a

small quantity of brandy, wine or ammonia, before commencing the inhalation. Provision for the free admission of air during the full narcotism is absolutely necessary.

The recumbent position of the patient is preferable; the prone position is inconvenient to the administrator, but entails no extra danger. In the erect or sitting posture there is danger from syncope. Sudden elevation or turning of the body should be avoided.

An apparatus is not essential to safety, if due care be taken in giving the anæsthetic. Free admixture of air with the anæsthetic is of the first importance; and guaranteeing this,

any apparatus may be employed.
If lint, or a handkerchief or a napkin is used it should be folded as an open cone, or held an inch or an inch and a half from the face. Chloroform should invariably be given slowly. Sudden increase in the strength of the anaesthetic is most dangerous. Three and a half percent is the average amount, and 4½ per cent, with 95½ of atmospheric air, is the maximum of the anaesthetic which can be required; given cautiously at first the quantity within this limit being slowly increased according to the necessities of the case, the administrator being guided more by its effect on the patient than by

the amount exhibited. Ether may be given more boldly.

The administrator should watch the respiration of his patient, and must keep one hand free for careful observation of the pulse. The patient who appears likely to vomit whilst beginning to inhale the anaesthetic must be at once brought fully under its influence; the tendency to sickness will then cease.

The occurrence, during the administration of an anaesthetic, of sudden pallor, lividity of the patient's countenance, or sudden failure or flickering of the pulse, or feeble or shallow respirations, indicate danger, and necessitate immediate withdrawal of the anaesthetic

until such symptoms have disappeared. On the occurrence of these symptoms and especially if they should become so urgent as to threaten death from failure of respiration, of the heart action, or of both together, the following rules of treatment should be observed:

Allow free access of fresh air, pull forward the lower jaw and possibly the tongue, and clear the mouth and fauces, keep or place the patient recumbent, dash cold water on the face and chest, and aid the respiratory movements by rhythmical compression of the thorax, Nélaton and Marion Sims advise the inversion of the body with the view of throwing what blood there is wholly

to the brain, on the theory that death from chloroform is, as a rule, due to syncope, or to cerebral anaemia. In the more threatening cases, commence instantly with artificial respiration, whether the respiration has failed alone or the pulse and the respiration together. Galvanism may be used in addition to artificial respiration, but artificial respiration is on no account to be delayed or suspended in order that galvanism may be tried. In extreme cases laryngotomy may be required. Few if any are insusceptible to the influence of anaesthetics, from two to ten minutes being required to induce anaesthesia. The time varies with age, temperament,

and habits, The mixture of ether
1 part, chloroform 2 parts, and ether 3 parts,
should be given in the same way as
chloroform alone, care being taken, when
lint or a handkerchief is used, to pre-
vent the too free escape of the vapor.
Anaesthetics are given when unavoid-
able under nearly all circumstances,
though caution is demanded in fatty,
weak, or dilated heart. In advanced
phthisis anaesthetics are generally contra-
indicated, as they are also in kidney
disease and extensive emphysema.
Anaesthetics are of priceless value
both to the physician and surgeon
as aids to diagnosis. And to the
accoucheur chloroform is invaluable,

no death having yet occurred from its use in obstetrics."

Chloroform, $CHCl_3$ a clear fluid, specific gravity 1.50 Discovered in 1831 by a French chemist, but was first used as an anaesthetic by Sir James Simpson in 1844. We can all appreciate the great superiority of chloroform over all other anaesthetics, but it is more dangerous, Some hold that its use should be restricted to obstetrical practice, 800 fatal cases have been reported in surgical practice,

Ether $C_4H_{10}O$ Sulphuric ether has a specific gravity 3/4 of water 0.723 It is a colorless liquid and highly inflammable. Discovered in the year 1540 by Valerius Cordus. It is more

commonly used in America than any other anaesthetic, it being much safer than Chloroform, Ether kills by paralysis of respiration, while Chloroform strikes down the heart at almost the same instant with the respiratory paralysis.

Nitrous Oxid N_2O Laughing gas!
Specific gravity of gas 1.527 of liquid 0.908
It is a colorless gas with a sweetish smell and taste, Its anaesthetic properties were first observed by Sir Humphry Davy, and first used by Horace Wells and Dr. Colton
Though it is very safe, owing to the anaesthesia produced by it being very transient, its use is restricted to short operations, such as opening abscesses

and extracting teeth,

Bromid of ethyl $C_2 H_5 Br$

Specific gravity 1.47 a colorless volatile liquid.

Discovered in the year 1827. In 1878 H. H. Turnbull of Philadelphia administered it with success in several minor surgical affections. In 1879 its use was commenced in the Penn. Hospital, since then it has been extensively used in America and in Europe. It causes death by a topic action on the centre of respiration. In the administration of this agent air must be almost entirely excluded. Two deaths have occured from bromid of ethyl.

This agent has been much used in Ophthalmic surgery by Prof. Chisolm

And is especially applicable to short operations, as its effects last only a few moments

Muriate of Cocaine, as a local anaesthetic has been known only since 1884, but has come rapidly into general use. It is applied to mucous membranes to which its use is restricted, and it is the anaesthetic now employed in operations for Cataract, Strabismus &c where heretofore a general Anaesthetic had to be used.

E. Oliver Belt.
Md. University Hospital

Feb. 17th 1886.

Typhoid Fever.

Typhoid signifies Typus-like. The appropriateness of this name consists in the resemblance of this disease to Typhus fever. Typhoid fever prevails very extensively in this country, and has been known with us as common continued fever. There are many other names given to this disease. Enteric is a good name, as good, or better than Typhoid though I will not make the change.
By the German writers it is called abdominal typhus. Prof Wood has suggested the name given above (Enteric)

Anatomical Character. Typhoid fever has certain special lesions, which are highly interesting in the pyrexia,

and Solitary Glands. The Changes which are Characteristic of the fever are thickening, Softening, and ulceration of these Glands. enlargment, Softening, and ulceration of the mesentric, and especially those corresponding to the morbid patches of the intestines. Among other things which are affected is the Jejunum, Duodenum, and the Pyloric end of the Stomach.

Other lesions met with are ulceration of the Pharynx and Epiglatic Cartilages. Softining of the Splen Liver and Kidneys Sometimes occurs. Hepatigation of the lungs, softining of the heart, and sometimes inflam-

mation of the meninges of the brain, with effusion. The first step in the abdominal lesions is sloughing away of the glands, and mucous membrane. The next is ulceration, and it may extend to the muscular coat. and also to the peritoneal sac. And may set up peritonitis, by discharging the contents of the intestines into peritoneal cavity. This is one source of peritonitis, Another is ulceration of the mesentaric glands. These glands sometimes get as large as pigeons eggs in this disease. and are either absorbed or burst. and cause peritonitis by discharging their contents into

the peritoneal cavity.
Usually the diseased patches of the intestines are indurated to the touch. They are sometimes smooth, and sometimes present an irregular granulated aspect. Sometimes the glands of the large intestines are exclusively affected, and the small intestines are entirely unaffected as regards the sloughing. The rapidity of the sloughing varies in different cases according to the time it commences. After it is completed Ulcers take the place of peyers patches, and also of the solitary glands. Ulceration of the lowest glands

rarely takes place before the end of the second week. Of Course there are exceptions. The glands do become affected the first week. Generally the uppermost glands do not ulcerate until third or fourth week. [redacted] The glands nearest the caecum are the first to become affected. Extension upwards until checked by some cause or other. Cicatrization, the last step in the series of processes. A thin serous like membrane is formed at the bottom of the ulcers. This membrane gradually becomes thicker, and firmer and at length the excavations produced by the sloughs

away of the glands ~~are~~ filled up.
It is probable that the glands are reproduced.
The process of cicatrigation usually begins in the third week, and goes on during convalescence.
The time occupied in the completion of this process varies in different cases. It is sometimes very slow. a fact which accounts for the persistence of the abdominal symtoms, in certain cases.
Sometimes after the cases of the fever has ended perforation of the intestines occures.
The opening may be very small extremely So sometimes or it may

be large. If due to ulceration it may not be larger than a pin point. But if due to sloughing or rupturing it may be of considerable size, set up acute peritonitis.

The preceding list is peculiar to Typhoid fever. And in a greater or less degree you will always find them present and the occur in no other disease

Clinical History

Typhoid fever as a rule is developed gradually. The time occupied in its development is considered by some as a prodromic, and as a stage of the disease.

The disease only in some rare cases

is so abrupt, as to cause the patient to take his bed at once.

Symptoms:

There is a sense of weariness, slight headache on rising in the morning, dulness of intellect, and irregular flushes of heat about the face. Epistaxis, and yellow watery diarrhoea, and slight vomiting. After considering the forming Stage it would be appropriate to Consider the anatomical Symptoms to which they are referable, The how the Countenance or General aspect, the nervous System, the digestive System the Skin the respiratory System, the Circulatory and Urinary System.

Countenance and general aspect. There is very marked alteration of the countenance for the first few days. The face usually more or less flushed in the early part of the disease. Afterwards the countenance presents a dull or listless expression or of stupidity. In some rare cases there is circumscribed redness of the cheeks. Generally signifying complication with pneumonia.

Nervous System. Pain in the head is more or less complained of during the first week. It is not always a prominent symptom, and never has the intensity which belongs to

the pain in the first stage of acute meningitis. It gradually becomes a matter less complained of as the disease advances.

Pain in the back usually at the begining or in early part of the disease. But not a prominent symptom

A low dull delirium is manifested in some cases, but not always,

As a rule this is not seen until the second week or later. Maybe the first day or two. Other symtoms referable to the nervous system, generally denoting gravity of disease are grasping at invisible objects, twitching the muscles of the face, and extremities, and subsultus

tendinum.

Digestive System. Anorexia is the rule, but there are exceptions.

Food and drink are sometimes acceptable when owing to the mental condition they are not asked for.

The tongue may be simply furred, but it is often thickly coated.

Which may be, whitish Brownish or even black or yellow, which may be cast once or repeatedly.

The surface then usually reddened and very dry and hard, In some cases the tongue is protruded with difficulty or hesitation. and when protruded may not be with drawn apparently from forgetfulness.

Sordes often collects upon the teeth the first week. Sometimes upon the lips also, especially in grave cases. Hemorrhage from gums sometimes occurs, in grave and mild cases. The gums often bleed upon slight pressure.

Diarrhoea in a large majority of cases, together with tympanitis and pain on pressure, especially over right iliac region is a valuable diagnostic feature. Ulcerative perforation of intestine generating in peritonitis may occur any time after first two weeks. Sometimes when the patients seemed to be decidedly convalescent.

Skin the most important. Symtoms are the Characteristic rose colored eruption of the abdominial region the ore of an isolated Papular they generally elevated so that you can distinguish it with the fingers. The redness momentarily passes off with slight pressure. The number is generally small, in the majority of cases not more than fifteen or twenty, sometimes only four or five. They continue to disappear and reappear during the career of the disease. The eruption is not always present.

Respiration is more or less abandant, apt to be more so at night in each.

case. Skin hot and dry. through the day.
Gangrene is liable to occur in situations exposed to pressure.
Bed sores may occur on notes and shoulders and hips. and must be prevented if possible. Have the positon of your patient changed often.

Respiratory Symtoms.

Troublesome Cough is not a prominent Symptom, unless some complication exists. (Pulmonary.)
But a slight cough is almost always present. Pneumonia is a not infrequent complication
This complication is rendered probable by prominence of cough. and accelerated breathing.

More or less acceleration of pulse belongs to the history of the disease. The danger usually is considerable if the pulse goes to 120 beats per minute. It may get higher than this, or it may come below the Standard in health. It has been known to fall as low as 40 beats. or lower. The frequency of the pulse may vary at different times of the day. More or less increase of heat of body is invariable. During the whole course of the disease the temperature is increased with the exceptional cases. In the exceptions it may be normal or less.

Though as a rule the Thermometer placed under the tongue or in the axilla it shows a daily increase to end of first week. at this time the temperature maybe as high as 100- 105--108- Fah.

During the progress of the disease there may be or is as rule an Oscillation of temperature between morning and evening. A high elevation of temperature in the morning. Viz: 106°-108°-110° F. indicates the approach of death.

There may be a considerable fall in temperature often very sudden.

Other Symtoms not denating convalescence or improvement is unfavorable. It maybe the fore runner of

some grave symptom. This has been observed to precede hemorrhage from bowels or perforating ulcer.

Urine The urine is usually scanty, and of high color, and specific gravity until the approach of convalescence, when it becomes abundant and of low specific gravity.

During the the progress of the disease as a rule the urea and uric acid are absolutly increased.

The coloring matter is also increased.

The presence of albumen during a part of the febrile career is not uncommon.

Renal casts in the urine are sometimes observed. These denote disease

of the kidneys either existing prior to or developed as a complication if with or without renal casts or albuminuria, and the urine is notably deficient in urea, uræmia is to be apprehended. The urine is sometimes retained in Typhoid fever and owing to the blunted perception the bladder may become dangerously distended, and call for relief by Catheter

Convalescence: It is difficult to define the date of convalescence, as you never see two cases alike in all respects. The fever rarely ends abruptly. It terminates generally like it appears; very slow. Sometimes the patient does not take his bed for sometime after

he has the disease. Again it may be very violent and the patient takes his or her bed at once, after convalescence in site collapse may occur after ten or fifteen days. fever rise up pulse run up to 120 or 130 per minute. The mental powers are impaired for a considerable time afterwards, in some cases.

Causation Typhoid fever is not confined to any one country, it is endemic in any quarter of the Globe. In many of the so called malarious districts, it is not observed as distinct from remittent fever. There is reason to believe in these districts it is obscured by being blended with periodical fever.

originates spontaneously, that is to say may be generated without, and reproduced within the body. There is a virus in the discharges, and it may be conveyed through the water-drank by the people. The belief is that the disease invariably proceeds from a special virus contained in the excretions, and the prevalence of the disease by the dissemination of the virus in emanation from water closets, privies drains, and — As a rule it is not communicated to those who come into contact with private patients, nor is propagated among hospital patients. It does differ widely from ~~Typhus fever~~. But there have been some

Striking outbreaks of Typhoid fever in localities in which it appears to be fairly attributable to emanation from water Closets, Drains, and sewage, Obstruction, and the drinking of water contaminated with the above.

Diagnosis: The patient suffers great weakness, his mind is dull or wandering, the Cheeks have a bright- circumscribed flush, the tongue is coated, red, fissured, or dry. There are headache, thirst loss of appetite, and purging of the bowels, the stools being of a yellow Color. The pulse is quick and feeble, the skin hot; and there is swelling of the abdomen, with tenderness and gurgling on pressure over the right iliac

region, and increased dulness in the region of the Splen. An eruption appears, about, or after, the seventh day, of a few rose-colored lenticular spots, which disappear for a moment on pressure. The eruption is chiefly confined to the chest and abdomen, and each spot disappears in a few days, to be succeeded by others near it: And the person being as a rule below 45 years of age.

Typhus fever attacks persons at any age. The approach of Typhoid fever is usually insidious, and the first symptoms are those of dyspepsia, sleeplessness, languor, dull pain of the head, often succeeded by slight delirium at nights, loss of appetite, and diarrhoea.

The gradual rise of temperature during first week. that in evening is often 2° higher than in the morning, whilst the next morning it maybe 1° less than the preceding evening. no increase of temperature after end of first week in the evening, but that of morning still less than in evening. in second week there is only a slight morning remission. in the beginning of the third week there is often an increase of temperature, and, if improvement takes place, the difference between the morning and evening is very striking. in cases of recovery the fall in temperature is gradual, not sudden as in Typhus. mild cases are generally

ended in twenty-one days, but severe ones may not end under four or five weeks. A permanent temperature of 104° or an elevation of the morning over the evening temperature is an unfavorable sign. Typhoid fever is often complicated with pneumonia, or it may be followed by phthisis. another complication is meningitis, tubercular peritonitis, acute phthisis, and Typhus fever. You distinguish it from meningitis by absence of or less urgency of vomiting, less severe pain of head, the feebleness of the pulse, the dryness of the tongue, and the diarrhoea present in enteric fever. Although, in both Typhoid fever, and tubercular peritonitis you may

have hectic flush, pinched features,
pain of abdomen, diarrhoea, yet in
peritonitis the tongue is usually clean
and there is no eruption. Acute
phthisis is distinguished from Typhoid
fever by the cough and difficulty
of breathing, which appear earlier,
and are more intense in the former
by the lower temperature, and the
presence of the stethoscopic signs of
tubercle, when these exist: also by absence
of Typhoid eruption and enlargement of
spleen. Typhus differs from Typhoid in
attacking persons above 45 years of age.
The attack is more sudden, duration shorter
delirium or stupor appears sooner, face is
dusky and generally flushed, bowels constipated

and the rash is darker, more general, and not after the first day or two, obliterated by pressure, nor does it appear in successive crops. Typhoid fever in children is often described as infantile remittent fever.

Prognosis.- The average mortality is about seventeen or eighteen per-cent. Death may occur at any period of the fever, but is most usual at the end of the third or beginning of the fourth week, the general cause being failure of the power of the heart. The prognosis is generally favorable in Children; after 40 years of age the mortality greatly increases. Stout persons are more apt to succumb than those who are thin;

pregnant females are unfavorable subjects, and drunkards are especially liable to sink on account of brain complications. A very frequent pulse and a feeble first sound of the heart are bad signs; if the pulse be maintained above 120 great weakness of the heart may be surmised. A high temperature is unfavorable, and its point of elevation at the end of the first week may be taken as a guide to the amount of the subsequent fever.
Excessive diarrhoea and copious haemorrhage from the bowels are bad signs, as indicating deep and extensive ulcerations. Perforation of the intestines is rarely recovered from. The danger is also in

proportion to the severity of the disturbance of the nervous system. Thus, a case is of a very unfavorable character when stupor or delirium becomes continuous or convulsive twitchings present themselves.

Treatment.- In no other disease have so many drugs been brought forward as specifics, and, nevertheless, none can be accepted as such. The same general rules must be, therefore observed as in the management of other acute infectious diseases. Free ventilation; cleanliness, careful diet, and good nursing are more to be trusted than drugs. Cold sponging will reduce fever but must be done with care.

A few small doses of Calomel at the beging, is very good. Or Seidlitz powders Castor oil is very good at beging and in the latter stages if a purgative is needed, Quinia Sulph in 10 – 15 gr doses is recommended by some will not suit all cases Digitalis is very good and used by a great many. Quinia is very good just at the crisis, probly better then then any other time. May be given in small doses after crisis Dovers powders used by a great many and do a great deal of good if used at the proper time Quinia may cause delirium and Collapse, if the patient is sleepless and the heart action good you will get benefit from Chloral. with or without Tonic mutic

Cold applications to head if fever is severe. This may produce sleep if it be absent. Stimulants Brandy or Whisky, Wine whey is very good as a Stimulant Give your remedies as the one called for, not because they are recomended for Typhoid fever. Oil Of Turpentine almost the Sheet anchor in most cases. Indications for its use red and dry tongue with thirst. 10-15 gtts in mucelage or white of egg is very good. Copaiba and Turpentine in equal parts are recomended by some.

Diarrhoea. Chalk mix. Or Bismuth and Dovers powders combined are good. Acetate of lead in 1-8 gr does very good if haemorrhage occurs but should not be combined with

Chalk mix. ℞ Bicarb - Soda. sub-nit - Bismuth aa -
X grs 3 or 4 hours apart ℞ Cupri. sulp -
grs ii Opii powder grs ii Confec Rose to make
8 Bills one every 3 or 4 hours is very good.
If much irritation about the rectum
a Suppository of Opium and acetate
of lead may be introduced. If any
Small amount of haemorrhage occur
do not interfere. as long as it does
not increase. Quiet the bowels with small
doses of opium and give rest to the part.
and it will generally stop. if it does not
Ergot F-ex- by the mouth or Ergotin hypo-
dermically is good will stop haemorrhage al-
most always. Treat your patient and not
the disease. Give plenty of sweet milk
and not too much physic. is the best.

Julius. J. Hilton

N.C.

Julius. J. Hilton
Hillsdale
Guilford Co
N. C.
1886

No.

Thesis.

[redacted]

By

Hubert Clayton

[redacted], University of Maryland

Class of 1876

Subject, The Diagnosis of the Diseases of Children.

DIRECTIONS.

To allow this cover and the sheets to lie open and flat, tie loosely.

The Diagnosis of the Diseases of Children.

The very interesting & invaluable lectures delivered by our learned & highly honored professor of the chair of the Diseases of Women & Children, have so interested me, that it has lead me to choose the above subject for my thesis. But little can be expected of one as I have had so little practical experience. Our worthy professor tells us that he won his first laurels by his careful study of the first cases he met with of the diseases of children. We all know that the interest of the profession is fast increasing in

the study of this branch. If there is no class of cases in which there is so much blind practice.

The clinical examination of children more especially of infants cannot be made in the same routine method as that generally practiced with adults. To make a thorough examination of children the physician must of necessity be possessed of much patience & a good temper. The helpless silence of the infant, the wilful silence or inconsistent answers of the older child; the fright most always produced by the examination render it very difficult & sometimes almost impossible to

[illegible] the true state of the different functions. Then it is very difficult to obtain a true history of the case from the attendants. It is also a sad fact that many physicians who enter upon the practice of their profession without a thorough preliminary knowledge of how to examine children, & many from a lack of calmness patience & a good temper, "grow satisfied with their ignorance", & will assure a poor mother that it is impossible to ascertain the trouble with the child, on account of its ill temper, or some other such excuse.

The principal reason why the diagnosis of the diseases of children is so difficult

is the absence of speech. But even after learning to talk children up to about the age of six or eight years are so obstinate & wilful, as to resist all attempts at an examination. Frequently this badness is brought on by the nurse & even the mother, who never tire of telling the child of the horrid old doctor, who gives nasty medicines. This is often a cruel mistake on the part of the mother for the child may be taken with some grave malady, which the physician is not able to ascertain the gravity of, simply for the non-ability to make an examination, because the child has been taught either to dislike or fear the

physician in attendance.

But notwithstanding the speech being absent in children & the diagnosis being rendered very difficult in many other ways; by an attentive & careful consideration of other resources in our power we are enabled to form conclusions with a great degree of precision; I speak of such resources as the expression, the nature of the cry, & physical examination &c. By a little power of soothing & persuading many obstacles may be overcome to aid us in our diagnosis.

Certain parts of an examination are much more readily made while the child is quiet, so it is well to look at it while

[illegible]: while other parts of the examination are made best while the child is agitated or disturbed that latter of course can be done at any time. We may not always be able to see the child asleep; but it may generally be made quiet by putting it to the breast. After sucking, a child is nearly always somewhat drowsy, even when sick.

Although a mother is apt to exaggerate very much the true symptoms of the trouble, much can be learned by careful attention to what she has to say. When called to see a child, it is important that we should inquire into the history of the case, bearing particularly upon the causes of the

sickness, the exact time & mode of the attack. While considering these objects is important, it is often even more important to consider in connection with them the health of the parents, the habitual diseases of the family, the cause of & their ages at death, if they be not living. & lastly if the child was born in a perfect state of health.

Hygienic conditions are also of the greatest importance the kind of habitation food, clothing, whether infant has been suckled or brought up on artificial diet. Always find out if patient has previously suffered with any disease, & if so, what disease? If from the symptom

present any of the eruptive fevers be suspected such as to whether it has ever had measles, varicella or any other eruptive fever. As the presence of the physician is apt to alarm the child it is best to make all interrogatories before seeing it; unless the child be well acquainted with him. So having gotten all the information we can from the attendants the physician must proceed to make a personal examination of the patient, & so endeavor to discover the exact nature of the sickness, & be enabled thereby to decide upon the correct mode of treatment.

There are many very important points to be considered in the clinical examina-

tion of a child, & I will take each one up separately as of course it will be easier for myself & those who may take the trouble to read my essay. —

The Countenance of an infant in health, while sleeping or perfectly quiet wears a sweet & lovely expression of comfort & content. No movement disturbs its innocent tranquility save sometimes a gentle smile. Now when any acute affection exists this lovely picture is much changed & we readily observe a great contrast to the ordinary smile of health. The features become contracted, forehead wrinkled, nostrils dilated thin & pink. The sickness even though it be

slight, changes greatly the former appearance
indeed character of its features.

The extent of these changes from the normal appearance of health, is generally in proportion to the severity of the attack.

It is thought by some, that by noticing what part of the face is most contorted or changed, we can tell what part of the body is affected. Some authors go so far as to state that different diseases impart to the physiognomy certain characteristics of that disease. But this can to a certain extent only be true. We can most always readily distinguish an abdominal from a cerebral disease, at a single glance.

So it is true we can distinguish without

difficulty between an abdominal & a cerebral or a cerebral & a thoracic trouble; but it can hardly be possible to diagnosticate between two abdominal or two cerebral affections.—Sometimes of the abdomen the lower part of the face presents the greatest change in expression. Pain gives to the countenance many shades of expression, according to how severe it may be. & as to whether it lasts any length of time or recurs at intervals. A contracted brow is brought by some to indicate pain in the head. While pain in the thoracic cavity, as it is generally more severe in breathing is denoted by muscles of the nostrils.—But by the eyes

[illegible] we cannot always tell exactly where pain exists, for in any severe pain all the [illegible] will be drawn & [illegible] excited, but we certainly know when pain exists & can also tell whether it be constant or paroxysmal. We can generally tell much by noticing the color of the face. In time in all fevers the face will be red to a certain extent, but if there be nervousness the face assumes a pale hue. There will be noticed in liver trouble or affection of the digestive organs a yellow or saffron hue, but in lung trouble where there is generally undue oxygenation of the blood, there will be a bluish or livid hue. The state of the lungs is often revealed

by carefully noting the play of the nostrils.—

By careful attention to the attitude & gesticulations of an infant a great deal can be learned. When in perfect health it will lie upon side or back. When there is even slight malaise it is no longer sprightly, laughing & kicking, but becomes quiet & subdued looking. An infant will want to be rocked in the cradle, while the older child will want to be held in the lap of its mother. In headache or any cerebral affection a child will often bend its head back & roll it about, put its hands to its head &c. While cutting teeth it will often put finger in mouth.— Flexion of fingers & toes generally indicate impending

convulsion. While the extension of the same indicate Laryngismus Stridulus. In abdominal pains it will flex legs upon body in order to relax the muscles. In Peritonitis child will always flex legs upon belly. —

The careful attention to the manner in which an infant cries is another very important means to help in aiding nosis. When a child cries from anger, it often suspends breath for a while & countenance becomes livid. If the cry be due to severe pain, as said above the features will be contracted & the cry will be sharp & shrill. In Pleurisy cry is apt to be sharp & loud while in Pneu-

meria it is much more subdued & more of a moan. In Croup a child has a very characteristic muffled cry. While when suffering from abdominal trouble it gives utterance to a cry without a tear. Toward the fatal termination of most all diseases, the so called return cry or inspiration ceases entirely, when the cry assumes a moaning or murmuring. An infant does not secrete tears till about the third month of life, so of course this function can not be noted in a diagnosis previous to that time. The suppression of tears, generally takes place in all acute dangerous affections, so it is an important sign & we may look upon it as a grave symptom. While

their reappearance after suppression is very favorable. — Whenever the crying of a child is obstinate & protracted, we should suspect one of two things Earache or Hungar. So when a child cries violently & constantly we should examine the ear, & if an abscess exists which is often the case, the child will flinch or yell. When the cry is from hungar, it makes many gesticulations with arms & legs & will be appeased for a moment with a finger but on finding it nothing to eat it sets up its wailing again. — — — — — —

By a careful consideration of the various phenomena connected with sleep, much useful information can be obtained

as to the [illegible]

children. We cannot tell the exact nature of the disease under which the child is laboring, but we can very certainly detect any deviation from health. The sleep of an infant is quiet & peaceful, the countenance being generally lit up by a gentle smile; its eyes are never tightly closed, indeed are often noticed half open, with the cornea concealed beneath the upper lid: the skin feels cool to the touch. This tranquil scene may be greatly changed by even a slight deviation from the normal state of health. We can generally ascertain nearly the exact time at which an attack began, by inquiring

at what time the child began to appear restless in its sleep. The younger the infant the longer is its time for sleep: as within the first month for example a perfectly healthy child nursed at an abundant breast will sleep twenty out of the twenty-four hours. As the child grows older the time for eating & sleeping grows more regular. During the first dentition a child don't sleep half as much as normally: after passing through the first dental period a child if perfectly well will fall asleep almost as soon as put to bed & will not wake till the following morning; & this sleep is sound & quiet without being disturbed by slight noises & without rolling & tumbling about.

Nothing is more suggestive of good health, comfort & well being than the quiet composure & graceful posture exhibited by a healthful child in profound sleep: the whole appearance of the child, its expression attitude & breathing, all declare a perfect & lovely ease & tranquility. But the most trifling irritation, or the slightest fever from any cause, soon destroys this calm & peaceful sleep: it becomes restless, starts suddenly or cries out, therefore to an attentive & careful physician the first sign of a disorder should be detected in the character of the sleep. The degree of course of the disturbance of this function will vary in proportion to the severity of the disturbing cause. If the

disturbance be slight the child will slumber but appears somewhat uneasy, its countenance will be changed & twitchings of the features noticed. It may toss about, & will sometimes start as if in some fearful dream. If the disturbance now be greater, the child becomes more restless often waking & is more difficult to put to sleep again. If sometimes awaken with a violent start & a scream as if much frightened. If the disturbance is still more severe it becomes entirely sleepless. Of course these disturbances are signs of a deviation from the natural healthful state & by enquiring as to when they first began, we can generally find out exactly when the at-

tack set in. —

The Pulse attains its maximum of beats to the minute, during the first month of infantile life, which is generally one at that time about eighteen beats during sleep. In most all infants even in good health we find the pulse irregular as to number & force of beats. This is essentially true that we should have a thorough knowledge of the average pulsations of a healthy child, in order to obtain a standard & then be able to tell when there is a departure from health. But the average obtained by most careful observers are nearly all different the one from the other, so it is hard to decide by which to go. I think we can hardly go

[illegible] the teachings of our Professor on this subject, as he is an extremely careful as well as experienced observer. He tells us that in the first half [illegible] of life the pulse may range from 104-164 to the minute. From the sixth to the twelfth month 106-109. But he also warns us that an irregularity of the pulse in an infant need not necessarily alarm us unless other symptoms present themselves. The circulation is somewhat more rapid in girls than boys, but the difference only amounts to about five beats in the minute, as it is not sufficient to be of any very decided value in making a Diagnosis. The irregularity of pulse is much more common during sleep

than while awake. As stated by Meigs & Pepper, this irregularity occurs in about one sixth of infants while awake & one third during sleep: they also state that the greatest irregularity exists while the pulse is lowest in sleep. The pulse should always be examined if possible during sleep, for the slightest disturbance, either moral or physical will cause a decided rise in the pulse of infants, & this is most marked according as the patient is younger. Then also while awake the child becomes agitated, & on account of the constant working of the flexors of the forearm, it is impossible to feel the pulse at all.—

The Heart to be an essential aid in

diagnosis must be examined also while the child is quiet. Like in the above during sleep is the best time, especially in infant. In the child the heart presents the same general characters as in the adult; except of course as regards the position & rapidity. The first sound is generally duller than the second; these sounds succeed each other with regularity but regular intervals. The extent of surface over which the sounds may be heard varies very much upon existing conditions; whether the child be agitated, the state of the lungs condition of the respiration, the presence of fever &c. If the child be frightened or much agitated in any way the sound may be heard over the whole area

child begin sometimes ten min. can be heard over the whole thorax. When the lungs are solid as in Pneumonia, the sounds are transmitted with much distinctness to the back, as in a solid state the lungs become a very good conducting media. This fact is sometimes of much value as a means of diagnosis. —

The variations in temperature of the body offer, far more certain indications, than the pulse which we know is very often changeable. As a rule the daily range of temperature in a healthy child is greater than in adults, there being about 2° F. difference. Generally the temperature falls in the evening, the fall being greater from 7 to 9 P.M.

The minimum temperature is noticed in early morning. When the temperature goes above 102 fever exists. If it rises it is a grave symptom. There are five diseases in which we always encounter high fever, namely. 1. Scarlet fever. 2. Tetanus. 3. Pneumonia. 4. Typhus fever. 5. Cholera infantum. Whenever the temperature runs as high as 105° F we should suspect Pneumonia.

The Respiration. To derive any advantage from this, it is also necessary that we should make the examination while the child is in a state of quietude. In infants it is almost impossible essential to make the examination while it is asleep, for at no other time will we find it uninfluenced by some disturbing

count. To obtain a correctly accurate idea of the frequency of respiration it should always be counted by the watch. For sometimes in children greatly increased breathing may pass unnoticed by the physician from the fact that it is still regular & performed without any apparent effort. Dr. Meigs states that he has known a child to breathe eighty times in a minute, without presenting any discomfort or pain in the act, & without any cough or wheezing sound to be heard at a short distance. The rate of respiration of children is very different at different ages. The average breathing in the first week of life is about forty to the minute, however it may rise from any slight dis-

turbance. From the age of two months to two years the average is about thirty five to the minute. From as the child grows older it breathes less frequently, than from two to six years the average is about twenty three while awake & eighteen while asleep. It remains nearly at this throughout childhood, or perhaps a little less than twenty three while awake & about twenty in sleep. In children the diaphragm plays a important part in the process of breathing. Indeed the respiration of very young infants is almost altogether abdominal on account of the action of this muscle. For this reason the rate of respiration can be better studied by an examination of

with the greatest difficulty often in the midst of violent struggling & cries. To avoid these obstacles a physician must have a quick yet decided manner. If the injection is very quick & expert, we can increase the interval between the cries. The auscultation is more difficult, but by watching attentively the very inspiration which precedes violent crying, the freedom with which air enters the lungs, the sounds & their character, & if there be any bronchial respiration a physician can often make his diagnosis with some amount of certainty. The position in which to hold a child during an examination is often of much importance. Infants not more than a year

may sometimes be examined while the child is in the act of sucking, but this is generally inconvenient as the inspirations are short & imperfect during the act. If a child resist, it is recommended by some authors that it should be laid across the lap of the mother. It is best to perform auscultation before percussion, as the latter is more apt to alarm the child & start it to crying. The posterior examination of the chest is much more important than the anterior, as in all inflamatory affections of the lungs, the posterior surfaces of those organs are distended first. This fact is thought to be due to the child passing so much of its time in the recumbent posture, causing the fluids of the

tion to gravitate to the most dependent portion. The respiration sounds in children are somewhat different from those of an adult. The vesicular murmur being stronger in the child & having a blowing sound. This is what was called puerile respiration by Laennec; & although it is a sign of health in the child, it denotes a deviation from the same in the adult. The expiration of a child is shorter & weaker than the inspiration, like it is in adult life. Percussion produces a much louder & more sonorous sound in children over two years of age than adults. This sonorousness is different on different parts of the chest in children as in adults. Being more sonorous in front

just below the ribs on the right side to about two inches below the nipple where it becomes dull owing to the position of the liver. On the left side the sound is much modified by the presence of the heart. The lateral regions are very sonorous above, but get dull as we go down in the region of the liver on one side & spleen on the other. The comparison of the two sides is of course important, but is not quite so useful as in older subjects. Pneumonia, pleurisy & other lung affection are more often double in children than in adults. —

To a thorough examination of the abdomen, by pressure, palpation &c, we can determine as to whether enlargements exist, or whether

there be accumulation of gases. While making this examination the child is almost bound to make rigid the muscles of this part: the attention of the child must be deviated in some way as to make these muscles lax. Vomiting is very common from over distention of the stomach, from curdling of milk, or any small indigestable substance contained in the stomach. Pneumonia & the eruptive fevers are often begun by an attack of vomiting. Frequent discharges of a colorless, odorless & frothy liquid means Cholera Infantum. The physician can learn much by the careful examination of the ejections of a child with his own eye & when much care is needed, should never trust a history

given by an attendant.

Having gotten to the end of my knowledge on this subject I will close & research hope that my remarks may be of use to some one who can not given more practical attention to the best means of investigating the diseases of Children. —

Hubert F Clayton

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Scarlet Fever

The terms Scarlet Fever, Scarlet Rash, and Scarlatina, are identical all having reference to the same disease and are used to describe the eruption characteristic of it, which is scarlet or red. These names are employed to designate and describe one of the most frequent of the contagious diseases and one which may attack any age, but is found attacking child hood most often.

It is an exanthematous disease, called scarlet to describe the color of the eruptions. It presents a remarkable diversity in different attacks, as regards to

or a greater part
of it.

Definitions.

An acute, infectious, self limiting, disease characterized by a peculiar exanthem called from its color scarlet fever, consisting of high fever, rapid pulse, diffused scarlet or bright red eruption, termination in desquamation, inflammation of throat, albuminuria, and frequently more or less nervous phenomena. It is a disease which when it runs its natural course, terminates about the seventh or eighth day; though frequently lasting a longer or shorter time. In some cases lasting only four to five days, and in others having symptoms of more

marked, it often lasts as long as two weeks, the duration of the disease depends greatly upon the nature and severity of the attack.

Causes

Scarlatina like other eruptive fevers of this class, is known to be propagated by a peculiar specific poison which is capable of maintaining its vitality for a long time, and by reason of its being capable of being transmitted by clothing or anything coming in contact with the patient, we arrive at the conclusion that it adheres to such articles as are used by the sick, and from their peculiarities

we have good reason to suppose,
and believe this morbific influence to
be due to a solid, eminently
contagious, being communicated
by the contact of the healthy with
the infected, or by coming in contact
with any article which may ad-
here to it the specific poison.
It occurs both as a sporadic and
epidemic disease, but never arises
spontaneously, the contagion
from a mild attack is as efficient
in its propagation of the disease,
as is that from the more
severe forms.
The contagium is probably con-
tained in miniatures from the sick, probably

from the expired breath also from the exhalations from the [illegible] lungs of a person becoming infected by coming in the atmosphere of Scarlet [illegible].

Statistics show that this disease occurs among children oftener than [illegible] adults and most often between the age of three and five years, and diminishes in frequency as age advances scarcely ever seen after forty.

The period of incubation is much shorter in scarlet-fever than in the other eruptive fevers; but its duration varies in different cases. Usually it requires two to five days for the eruptions to show itself. The susceptibility to scarlet fever is by no means universal

as it is less so than Variola and Measles. The slightest contact with the morbid excreta is sufficient to produce the disease in one susceptible to it. Yet there appears to be more susceptibility to the poisons when taken or brought in contact during the height of the disease. The susceptibility varies greatly; varying so much that in some families while one member has it and several exposed to the contagium, a few fail to take it or manifest any of its symptoms. Those most susceptible to it are those whose hygienic surroundings are bad and who are exposed to debilitating influences, and who have as a consequence, but little vital power.

The susceptibility of the same individual varies or may vary at different times. Infants under two years are not very susceptible to it, though they do have it sometimes, but between the ages of two and five is its most frequent time of attack. Sex and race are said to have but little influence as to susceptibility. Negroes are said to be less susceptible than are the whites, and so far as my knowledge and experience has existed I know of no case among the negroes, and I may add that I have had excellent chances of observation, as my home has always been in that part of North Carolina where their number approach that of the white population.

I am not aware how great this difference is, but only know it to be very rare among the colored population, and quite frequent among the whites. The disease does not tend to recur, and it is seldom that it ever attacks the same person more than once, however it does sometimes occur, but always in a milder degree than the first attacks.

Symptoms.

Scarlatina usually begins its period of invasion very abruptly and quite suddenly, and often violently, usually a well marked chill ushers in the period of incubation in the adult with or without fever, but often fever intermittently.

In children violent convulsions are apt to be among the first signs with vomiting and burning headache and shrieks several convulsions consecutively with high fever rising rapidly reaching 104°–107° in a short time, usually the mouth feels dry, and has a sensations of heat which is not quenched by water, and on examining the throat the palate, tonsils and pharynx are seen to be red swollen and inflamed, the tongue has a yellowish coating. The fever is almost always continuous, having no well marked intermissions or remission. In many cases the disease comes on the patient being in a stupor and remaining, thus showing some affection of the cerebro spinal system

Vomiting usually attends the commencement of the attack between the period of incubation and eruption, and takes place about eighteen or twenty hours after the attack has set in; this vomiting is thought to be due to some peculiar action of the scarlatina virus upon the brain producing what is known as sympathetic vomiting; frequent and obstinate vomiting usually denotes a severe attack, and is prognostic of an unfavorable termination. When this symptom is slight or absent the attack is usually mild in adults. For it may be absent in children and yet be followed by a severe form of the disease. After these symptoms have lasted for about one day; the rash usually makes its appearance first about the ears, neck, and shoulders;

in the form of redish indistinct patches,
these patches rapidly uniting, and quickly
spread over the whole surface of the body,
so that in a few hours, the body after the
first appearance of the eruption will be
broken out, having the peculiar scarlet color,
which greatly resembles that caused by
the long application of a mustard plaster;
on carefully passing the fingers over the
surface, you may feel the papillae slightly
enlarged and elevated, the mucous membrane
of the mouth is swollen and red, often having
a diphtheritic deposit upon it resembling
that of diphtheria, excepting that it peels off;
the urine is high colored, during the first
few days having a smoky appearance con-
taining more or less blood and albumen.

The eruption begins to fade upon the parts where it first shows itself, sometimes so soon that the stage of eruption has not completed itself upon all parts of the surface. It never stands at its maximum longer than one day, usually not so long as that, and it rapidly disappears requiring not more than three or four days; thus making the time occupied by the eruption not longer than three to seven days.

As the eruption fades, the surface of the skin begins to assume its normal color, desquamation or exfoliation of the epidermis commences first by shedding small scales;

of epidermis, and later larger sheets are thrown off. often a whole hand or foot shedding its epidermis at once. the shedding appears to begin always at the extremities.

When the eruption declines and desquamation takes place. the temperature and febrile symptoms also decline. usually the fever declines gradually, terminating by what is called lysis. In a very short time the skin begins its normal functions, and becomes moist and the patient begins to feel better, and is able to eat, having very little trouble in swallowing as the swollen tonsils and glands have now returned to their normal size.

The urine becomes more abundant, and assumes its normal color.

Certain cases are characterized by severe symptoms, such as high fever, frequent pulse, delirium, and in children convulsions; these signs denote a very severe attack, and death often takes place in a few days, or perhaps in a few hours, and there may have been no eruptions or symptoms at all developed; otherwise than those already mentioned, thus showing death to be caused not by the disease, but by the severity of its symptoms.

The stage of Eruption is commonly ushered in by convulsions and

delirium in children, and in the adult by a chill or chilly sensations. It requires only a short time for the body to be entirely broken out, after the first appearance of the eruption which is seen first upon the face and neck, and then rapidly extending over the whole body.

They look like minute dots or specks at first and soon coalesce and form large irregular patches, Usually the eruption is not painful, but at times itches and is very painful. The eruption attains its maximum about the third day after its first appearance, when the eruption on the skin is slight, there is apt to be more throat trouble. The submaxillary and parotid glands are often swollen.

The tongue has a greenish coating, and looks as if sand had been sprinkled on it. This coating soon exfoliates, leaving a tongue resembling a strawberry. The temperature increases after the eruption and the pulse more frequent, varying from 100-120 per minute, and the temperature varies from 102° to 103° and in some fatal cases even higher. In some case there is constipation, and in others diarrhoea. Albuminuria occurs in this stage and often does not denote any renal disease. The eruptions lasts from three to seven days in the majority of cases, but sometimes shorter, but most often prolonged eight or ten days or maybe longer.

The stage of Desquamation follows — immediately the decline of the eruptions and a little before its disappearance, desquamation is never wanting, save when the eruption is absent. In favorable cases the febrile symptoms diminish at the commencement of exfoliation, and if there be no complications the patient convalesces rapidly. Often this process of desquamation becomes so painful as to be almost unbearable to the patient. Albuminuria occurs in this stage more frequently than in the eruptive stage. Certain cases are characterized by extreme violence and gravity of symptoms at the onset of the attack, and most often

terminating sadly. The pulse becomes quick numbering 140-160 per minute, and the temperature rises very high there is great restlessness and often delirium; and sometimes convulsions and coma which is indicative of approaching death, within a few days or hours even before the eruption has made its appearance: such attacks having these symptoms are truly malignant, and are met with most often in epidemics. In certain cases there is marked throat affection, and to such cases is applied the name Scarlatina Anginosa, in these cases the tonsils are swollen and covered with

mucous deposits, rendering deglutition difficult, the inflammation may extend to posterior nares and discharge acrid pus which excoriates the parts over which it flows the breath is very fetid, and in some cases having a gangrenous odor, extension of the inflammation into the eustachian tubes is liable to take place, and often perforates the drum, setting up chronic otitis, sometimes facial paralysis necrosis of bone and meningitis are the results of the extended inflammation.

Diagnosis of Scarlatina.

In the commencement before the eruptions it is difficult to make a diagnosis as there are there are no symptoms upon which to base a diagnosis, but later we have symptoms upon which we can make a positive diagnosis. The short duration of incubation and the intense fever, the appearance of the eruptions on lower extremities simultaneously with that upon the neck and face, the scarlet color of the eruptions all these are positive signs of Scarlatina, Diagnosed from measles, scarlet fever is known by the eruptions coming out on second day

without catarrhal symptoms, but with sore throat, and by it being uniformly distributed instead of being in patches. From rosiola by high fever and sore throat, and the eruption in rosiola is in irregular blotches and not of a scarlet color, and from the other eruptive diseases by constant watch in the development of the attacks.

Sequelae. The diseases of the kidneys which this disease so often produces are by far the most serious and important of its sequelae, we know that the kidneys are effected by pricking

the urine high colored and loaded with albumen, the presence of tube cast with blood corpuscles is more significant of disease than the presence of albumen; we also have uraemia from scanty excretion of urine. Otitis is not uncommon, neither is suppuration about the joints.
Endocarditis or pericarditis may occur. Dropsy is the most common and in many cases the serious of the sequelae, There is also hemorrhage from various parts of the body at times, Some times hydrothorax is so great as to interfere grately with respiration.

Prognosis. The prognosis depends upon the form, whether mild or severe, the presence or absence of complications. Simple form is less dangerous and majority of cases get well of this form. The anginose form is more fatal, and in malignant cases the case is almost always fatal. The fatality varies in different epidemics, in some cases the proportion of cases is about one to twenty. The symptoms which denote grave termination are frequent pulse, high temperature, and acute delirium, mode of death is by asthenia. In severe

throat extinction the prognosis is unfavorable. If gangrene of mouth death is most apt to follow. If amount of urine is scanty expect convulsions and probably death. Prognosis is very grave in puerperal stage. Temperature regulates the prognosis more than any other symptom. If temperature does not exceed 102°F there is little danger unless complications should arise, but if temperature exceeds this much the prognosis is very grave; as a rule it is graver in adults than in children.

Treatment. Scarlatina is not a disease which can be aborted, and isolation is the only prophylactic to be relied upon, there is no remedy having a preventive influence. Though for a long time great value has been ascribed to the use of belladonna, but so far, we have no positive proof of its preventive powers. Mild cases do not require active treatment, give cold drinks of lemonade ice &c. order laxatives to keep the bowels open, prevent exposure, but give a plenty of fresh air. and in winter keep patient indoors four weeks after the fever

If fever runs up as high as 106°F. put in a bath of 96°-98°F and then wrap up in blankets and put to bed rub over the body ℞ Glycerine ℥i Acid Carbolic gr ij Cold cream ℥j M. as an ointment. Give crushed ice and moist heat about the throat, and if much throat involvement use spray, give plenty of milk.
If albuminuria present after the fever has disappeared and patient strong apply cups over the kidneys, and use internally, any of the following drugs. Digitalis Tr. Iron and Bashams mixture to act upon kidneys. Pilocarpine may be used to produce diaphoresis. Inhalation of Chloroform in convulsions.

Diphtheria.

Diphtheria is a specific constitutional disease, characterised by a granular, fibrinous exudation upon the surface, and in the substance of mucous membranes, and upon abraded surfaces, in the form of a "False Membrane."

It is a disease of antiquity dating back as far as the commencement of the Christian era.

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by different writers by a variety of
names, such as Ulcus egyptiacum
vel syriacum, cynanche maligna,
cynanche contagiosa; Angina maligna,
Angina gangraenosa, morbus suffo-
cans vel strangulatorius; Parotitis,
Malignant sore throat, Epidemic
croup etc. The distinctive char-
acteristics of the affection were clearly
elucidated by Bretonneau in 1821,
1825, and 1826, who applied to it the
name Diphtheria by which name
it has been known ever since.
This name embodies in its
signification the most characteri-
stic local event viz, the for-
mation of a false membrane

and has, to say the least, the negative merit of not involving any hypothesis concerning the Pathology of the affection.

Diphtheria, is preeminently a disease of child-hood. The largest majority of cases occuring between two (2) and ten (10) years. It rarely ever occurs prior to the third month. Cases are infrequent after middle life and old age seems to possess an immunity from Diphtheria.

Incubation.

Diphtheria has an incubative period, which varies from two (2) to ten (10) days

Nature and Cause.

The frequent occurrence of epidemic diphtheria during the last four years, and the great mortality which has attended it has awakened an interest in the malady which has led to a careful study of its causes and nature. During the last five years a new line of investigation has been followed by experimenting on animals, the results being observed in the microscope. Those who have taken the lead in this new field of investigation are Oertel, Klebs and Loeffler of Germany. Their discoveries

are so important and future research promises so much that a brief statement of the present in reference cannot fail to be interesting at the present time, when Diphtheria is so prevalent and fatal in this and other lands. The minute objects in which the observers have alleged have been discovered in patients affected with Diphtheria, and which they suppose causes the disease are engowed with life and motion. They belong to the class of microscopic vegitable parasites which have been designated Bacteria.

The bacteria have been divided by Cohn into four genera, with species. Only two (2) of these, it is thought, sustains a causal relation to Diphtheria. Namely micro-coccus; and micro-bacterium or rod like bacterium which penitrates the tissue. This later form is thought to less numerous although it is found coexisting with the former. M. S. Bacilli have been found in the discharge from the edges of wounds produced by the operation of tracheotomy, performed for Diphtheritic laryngitis. Upon these edges they

multiply very rapidly just before the Pseudo-membrane is formed. In the commencement of Diphtheria the grayish white spots which appear upon the inflamed part consists entirely of these Bacteria with epithelial cells and mucus. White fibrine and pus appear at a later period as a result of inflamatory reaction. Various experiments were made by Oertel, Hüter, Krassiloff and others to determine more fully the exact relation of the Sphero-Bacteria and Micro-Bacteria. The mucous membrane of air passages, the Cornea and muscles

in animals were inoculated with Diphtheritic matter and these two Kinds of bacteria were found to increase rapidly penetrating the tissue in a very short time and affecting the system. Rassekoff and Schmidt inoculated the cornea with Diphtheritic matter, and found that the sphero-bacteria and micro-bacteria penetrated its layers, forcing them apart, and causing within a few days intense Keratitis and death of the animal by infection of its blood. They fill the blood and lymph vessels and

in a mechanical way, a drawing up of the fluids, and, as a consequence, serous exudation. The blood vessels become swollen due to the stagnation of blood, inducing disturbance of nutrition in the walls of the capillaries and may rupture them.

The importance of such experiments cannot be too highly estimated. Those who have performed these experiments confidently claim that Diphtheria is caused by Bacteria, which coming in contact with the mucous membrane or the cuticle deprived of its

epidermis adhere to it, multiply very rapidly, burrow through the tissue and entering the vessels will affect the entire system.

The reasons assigned why Diphtheritic inflammation in most cases appears primarily and chiefly upon Faucel and nasal mucous membranes, is that the air containing the germs are continually passing over their surfaces. The causes and nature of the disease cannot in general be fully elucidated by experiments alone, such as have been detailed, but they should be aided by

clinical observations and of these their has been abundance in New York, in the last twenty (26) years.

Their are two distinct propositions included in the Bacteria theory viz. That Bacteria causes Diphtheria, and that the disease is first local and afterwards becomes constitutional by entrance of the specific poison into the blood. Whether Diphtheria is primarily Local or primarily Constitutional or that it is in some at first local and in other first constitutional is a distinct proposition from that regarding the relation of Bacteria to the

malady, and whatever may be the
truth in regard to it, the remedies
not affect the latter. Diphtheria is
a local malady in its commence-
ment in most cases, occurring
from lodgment of the diphtheritic
poison at some point upon the
mucous membrane, or upon the
skin denuded of its epidermis.

When Diphtheria has a local
commencement, infection of the
system occurs by absorption of the
poison through the capillaries, which
are connected with the seat of the
disease upon the surface.

Cellulitis producing tumefaction
along the neck are of importance

for it shows the lymphatics are affected by the poison and thereby affecting the system. The diphtheritic poison has been found to enter the lungs; supposed to be caused by inhalation. Examinations have been made of the lungs of children who died during the first days of the attack. The microscope showed that Bacteria was absorbed in the bronchial tubes, but no false membrane seen on any of the mucous surfaces.

Diphtheria is generally classified among the acute infectious diseases with Scarlatina and Rubeola, it often occurs in a secondary as

well as a primary form. In Putrid and Typhus fever Scarlitena and Rubeola the mortality is greatly increased with the complication of Diphtheria. Diphtheria though so often communicated from person to person not infrequently occurs "De Novo" in localities where the condition are favorble for its development, and where it prevails as an epidemic or endemic.

Anitomical Characters.

The characteristic feature is the presence of a false membrane. The fauces in the vast majority of cases are primarily affected and in a certain number of cases the local

affection is limited to this situation. The first appearance is redness of the fauces, dryness and fulness of the throat, giving pain on deglutition, flushed face, hot and dry skin, occasionally head-ache and nausia. The pseudo membrane at first thin and semi-transparent, soon becomes opaque and more or less thick, and has a tendency to still become darker, from an ash collor, to a very dark hue, due to the decomposition and imbibition of blood.

Different cases differ in the extent of the affection within the fauces. If the the fauces be inspected it

will be found to present a bright red color limited to one or both tonsilar regions. The color of the patches change from gray to even black and presents somewhat a gangrenous appearance. The pseudo membrane is often firmer in one part than in another. After a few days decomposition commences, and that which was first formed becomes softer than the most recent production.
When this occurs the exudation changes from whitish to a dirty brown or grayish color. If the pseudo membrane becomes detached, in a few days it will

again be covered over with a new one. Of late pathologists distinguish diphtheritic false membrane from the exudation which occurs within the Larynx and Trachea in fibrinous Laryngitis or true Croup. The diphtheritic formation within the throat is to be discriminated from an accumulation of follicular secretion which is quite common especially over the tonsils. The latter is a patulous deposit, not membraniform nor removable in strips or patches and may be seen to dip into the follicles. Pharyngitis with follicular secretions is

often called Diphtheria. This form manifests itself locally in the fauces alone, but in cases of more less severity it may also involve the nares.

The eustachian tube is occasionally involved. The mucous membrane of the cheeks and gums may also be coated with pseudo membrane. It may also affect the oesophagus, conjunctiva, vagina and prepuce.

When it affects the Larynx or air passages it is then often complicated with Pneumonia.

When it affects the nares it is attended with a discharge

of mucus and pus. This is not a very dangerous complication except in nursing children, where it interferes with lactition.

Clinical History.

Diphtheria presents in different cases such differences in general and local symptoms, that some writers have substituted several varieties. In general in the commencement of an epidemic Diphtheria is more severe and fatal and its symptoms more violent. A marked point of difference relates to the development of the disease.

The attack is sometimes acute, commencing with a chill more or less pronounced, which is followed by a high febrile condition. At other times the development is more gradual.

The patient complains of indefinite ailments. After the development of the disease, the symptoms are naturally divided into general and local. The latter being referable to the parts affected with diphtheritic inflammation.

The slight soreness of the throat which accompanies the initial stage does not ordinarily become very much severer

during the course of the disease and it often disappears within a few days. The affection of the fauces is rarely accompanied with notable pain, hence the liability of overlooking its existance, though by pressing upon the fauces it is found to be tender, giving pain during deglutition as well as difficulty in swallowing liquids.

The patient in endeavoring to swallow, the food may be regurgitated through the nose. The tongue is covered with a moist fur, and may be so involved as to produce stifness and difficulty

articulation. The pulse in different cases varies greatly in volume and frequency. In some cases being very frequent, while in others the acceleration is moderate. Again it may be frequent in the begining and suddenly fall below the average health, and may be soft and compressible, signifying diminished power of the hearts action, or it may be very irreglar.

Epistaxis, is sometimes so profuse as to require plugging up of the nares. May also have hemorage from mouth and throat. However, when the

inflammation extends down to the Larynx and Trachea accompanied with fibrinous exudations it is seldom amenable to treatment,

Dyspnoea is produced and inspirations are protracted and produces a whistling kind of noise. The skin is occasionally cool and sometimes cold and in some cases presents a mucic appearance.

Vomiting and anorexia is not an unfrequent symptom and when such occurs it may often prove serious on account of interfering with nutrition of

Dropsy. Albuminuria is also a frequent symptom. This was discovered by Bright about the middle of the 18th century.

In some cases it appears quite early in the disease while in others it does not appear until late, and it is thought to be found more abundant in bad cases. In cases where their is much albumen found in the urine, death may occur from convulsions or coma.

Sequela.

The sequela of this disease also forms an important part in the clinical history

The blood is vitiated being deficient in red corpuscles and the excretions of urine from the kidneys increased the impoverishment of the blood.

The muscles of the Palate, Tongue and Pharynx are frequently affected which causes difficult phonation, and if food be taken it passes into the posterior nares and cannot be swallowed until several efforts are made, and also when deglutition is performed some of the food or liquids passes into the larynx producing violent coughing.

This condition of paralysis may also extend the extremities producing a sensation of numbness, Their is not often a total loss of sensation or of motion in the paralysed part, but their is numbness with great difficulty rather than impossibility of motion.

The special senses are liable to be affected more especially the sense of sight.

Diagnosis. In a great majority of cases the diagnosis is easily made, especially if the disease has lasted for six or eight hours.

The diagnosis of diphtheria

its or the presence of a membranous exudation. When it prevails as an epidemic, a form of "Sore Throat" a phlegmonal catarrh usually prevails at the same time, and is often called diphtheritic sore throat. This form of sore throat is usually ushered in by a chill, followed by a febrile movement. The mucous membrane of the throat is red showing a congested condition. Often this is little spots seen and on close examination they are found to contain mucus. This condition is purely catarrhal

and not membranous.
Perhaps the only disease which their is much difficulty to differentiate diphtheria from is Pharyngitis and Laryngitis. But in neither of these cases do we have the characteristic false membrane formed. Other characteristic symptoms has been spoken of. Also albuminuria is quite common in diphtheria whilst it is exceedingly rare in the former. It is also necessary to distinguish diphtheria from Scarlatina sore throat. In the later affection the

redness is profuse over the mouth and pharynx, but in the former, it is much darker. Also the exudation is quite different, in the former it is mucus, and confined generally to surface of tonsils, While in diphtheria it commences at one point, gradually spreading, exudation is adherent, and tough, ranging a grayish brown color. Also in Scarlatina there is no characteristic eruption usually spreading over the entire surface.

Prognosis. This is an infectious disease that causes greater difference in type of

severity. In many cases it might well be compared to a Lion that lingueth at night and destroyeth in the noon-day. On account of the many different complications or rather the different ways in which this disease terminates makes the prognosis less favorible, for they may come on very suddenly. It may terminate in blood poisoning, which causes repugnance to food, vomiting, pallor of countenance and great weakness. Also in some cases where their is much albumen in the urine the

[illegible] favorable. A favorable prognosis also depends largely on the extent of the inflammation.

Treatment. Resolved into Local [illegible] in treating [illegible] affections within the farcis should be Local. Should not use escharotics as was formerly used.

Should use one of the following [illegible] advantageous.

℞ Carbolic Acid gr iii-i

[illegible] ℥xi

[illegible] ℥i

[illegible]

℞ Lactic Acid gr xx-v
Aqua Calcis ℥i

℞ Potassa Permanganate gr x
Aqua Calcis ℥i

℞ Boracic Acid gr xv
Aqua Calcis ℥i
Chlorate Potassa [illegible]
used as a gargle.
Constitutional Treatment.
[illegible]
should give Quinine, give in
small doses often repeated in
order to avoid its [illegible]
Tinc Ferri Chloride also [illegible]
an important part [illegible]

as a Thesis from a student of Pennsylvania.

J. M. McManigall,
McAlevy's Fort
Huntingdon County,

Acute Lobar Pneumonia.

D. Sh. P. DuBose.

Acute Lobar or Croupous Pneumonia.

An acute inflammation affection of the Parenchyma of the lung, in which the lining membrane of the air vesicles and bronchioles is involved in a true croupous form of inflammation.

This disease is more frequently met with in winter and early spring. It attacks persons of all ages and of both sexes, though men more frequently suffer from it than females. Rarely seen in infants at the breast or during the first few years of life, it is on the other hand a very common

disease of the age most with those of weak constitution.
Tuberculous disease of the lung does not seem to act as a special predisposing cause of Pneumonia, for when a tuberculous lung is attacked the inflammation does not tend especially to choose out its seat the part containing tubercular deposit, nor are such subjects particularly prone to suffer from attacks of Pneumonic inflammation.
Bronchitis does not tend to extend to the smallest ramifications of the Bronchi, and to the air vesicles, and [illegible]

in pneumonia, and it is very rare to find it in those who are subject to Emphysema, Chronic Pleurisy, and Asthma. It is also rare in organic diseases of the heart.

When uncomplicated it generally extends over an entire lobe or attacking a lung, hence the term Lobar. Other lobes may become affected, and the disease extend over the whole lung, or the attack may implicate both lungs, when it is spoken of as "Double Pneumonia."

The inflammation does not extend directly from one lobe to

another; when a second becomes involved it is the result of a separate invasion

Though often seen to be the result of some unusual exposure to extremes of temperature, it does not seem to detract from this as a specific cause, for it is at times found prevalent in epidemic form attacking many throughout a community; and frequently those who are not aware of any special imprudence or exposure, to which the attack

might be attributed, as among the number who suffer from the prevailing disease.

Pneumonia is divisible into three stages or degrees of progress.

1. First, or stage of Engorgement
Second, of Hepatization or Solidification.
Third - that of Granular Hepatization or Purulent Infiltration.

During the first stage, great hyperaemia occurs, and the affected portion of lung is engorged with blood,

which gives it a dark red color.
It is increased in weight, firm on pressure, and on section a frothy serous fluid, containing much blood, and extremely tenacious, is seen. The air cells in this stage still contain air though there is a small amount of coagulated albuminous fluid into their cavities.
The Second stage is characterized by the exudation of fibrin from the congested capillaries into the Vesicles and Bronchioles. This speedily coagulates, blocking them up and forming with the lung tissue a solid mass.
The lung is now much increased

in weight, more brittle, and sinks in water. On section it presents a solid reddish appearance, the Vesicular cavities and Bronchioles being completely filled by the Lymph or fibrinous exudation. This coagulated, giving it a granular appearance: from its general resemblance to the Liver in this condition the term Hepatization has been adopted. Besides the exudation of lymph, an active formation of new cells goes on, probably from the activity of cells found in small numbers in the Vesicular walls in health. Later this reddish tint caused by the presence of blood fades and the lung

assumes a yellowish or grayish cast, in other respects remaining the same; this has been called Yellow Hepatization.

During the second stage the lung tissue remains unaffected, and on the removal of the products of exudation it soon resumed all its normal function.

If resolution sets in during this period, an albuminous serum exudes from the vesicular walls, which, mixing with the solid material already there, gradually emulsifies and liquefies it, and absorption through the bronchioles and vesicles rapidly removes it.

- a small amount is removed by expectoration in proportion to that which is absorbed.-
On the other hand, resolution may fail to take place, and the contents of the cells undergo purulent degeneration, and we find in the vesicles and bronchioles a mixture of solidified fibrin and pus.-
The lung is now extremely brittle, and presents a grayish appearance, which is termed "Gray Hepatization" or "Purulent Infiltration". The tissue proper of the lung still remains intact, and recovery with restoration of normal function may even here occur -

A severe rigor followed by fever is characteristic of the onset of Pneumonia. The chill may last from a half to two or three hours; and in very few diseases do we find the onset accompanied by rigors of greater severity. As a general rule, no repetition of the chill occurs during the whole course of the disease:-

The temperature is elevated from the first, but does not become apparent till the cold stage is over, when it rises quite high, reaching at times even in a single day 104 to 105 degrees but rarely going higher. This fever is of a remittent form reaching its lowest

degree in the early morning hours rising in the forenoon, and reaching its maximum during the afternoon. It continues throughout the first and second stages, with greater or less intensity, until just before the commencement of the stage of resolution, when it often rises to a higher degree than ever before reached, and then abating with the other symptoms soon, or gradually, falls to normal. Then a sudden rise gives warning of the involvement of a new portion of lung. The seat of a pneumonic inflammation is the lower lobe of the lung, and the right suffers from its attacks more frequently than does the left.

With, or soon after, the chill, pain appears as a symptom. It varies in intensity according to its situation. If deep in the lung and not reaching the pleural surface it is dull in character and causes the patient a comparatively small amount of discomfort; but when as is very often the case, the inflammation extends to the surface, a localized pleurisy is set up causing sharp, lancinating pains, which in the earlier stages of the disease is one of the most annoying & prominent symptoms - greatly adding to the dyspnoea and making the effort of coughing a dreaded exertion. The pain becomes less severe & a source of less annoyance as the disease advances. A dry cough appears almost

simultaneously with the other symptoms. It is at first dry and accompanied by a scanty mucoid expectoration, which soon gives place to the watery sputa. During the earlier part of the disease, where pleuritic exists so painful is the effort of coughing, that the patient often cry out & later, as the second stage comes on, and the expectoration is more abundant, the pain is not so acute, and as resolution advances the cough with the sputa finally disappear.

The sputa during the stage of invasion are scanty and of a glairy viscid character but they soon assume the characteristics

of Pneumonic sputa. It is of a reddish or "rusty" color, caused by the admixture of blood from the ruptured capillaries, and varies in shade in proportion to the amount of blood it contains, sometimes being light red, and at others of a dark or brick red color; it is often of a brownish color, and this has been termed Rusty Sputum, which forms an exceedingly important diagnostic point in the disease.

The Sputum retains its "rusty" color until the second stage is fully established, and as resolution sets in it loses its rusty tint, & becomes more free, and of a yellowish color, loosing much of

its tenacity, which, in the earlier stages, is so great that often the receptacle containing it may be inverted without its running out. The patient finds trouble in expectorating it, and the nurse has to wipe it from the lips with a cloth in some cases.
The rust color of the sputa may be entirely absent; in old men, this is the case, where it has a yellowish color from the first. In infants the sputa is swallowed, & hence none is seen, and in some cases we find absence of sputa altogether.
Should purulent infiltration take place, the expectoration contains pus and degenerating matter, is more copious, and

of a yellowish gray color
The Respiration from the first
points to trouble in the proper
aeration of the blood; it is short
and quick, and the patient avoids
taking a full, deep inspiration, and
as much as possible desists from
breathing on the affected side.
The alae of the nose are seen
to dilate on inspiration.
Respiration is much increased in
frequency, at times reaching
forty or fifty to the minute, and
is short and superficial. The pain
caused by a full breath has much
to do with causing its shallowness,
while the impairment of a portion of

the lung, impeding normal function, and the existing need of more air during the febrile action, make breathing rapid and distressed. On the involvement of a new portion of lung, the breathing becomes more troubled and increased in rapidity, and the patient finds difficulty in getting sufficient air for natures purposes. As resolution comes on, the respiration is more free, and of less annoyance to the patient.

During the second stage the fever continues, but the cough is looser and expectoration more free. The Sputum during solidification

gradually loses its rusty tint, and comes mainly from the smaller bronchial tubes, the vesicles being blocked up by coagulated exudation. Dyspnoea still continues. Should Resolution begin from this stage, the temperature often rises to a point higher than ever previously attained, then rapidly falls. The patients appetite, which, during the first & second stages is lost, returns; the sputa loose their tenacity in a great measure, and are of a yellowish color and more easily expectorated.

Cough and expectoration gradually subside as resolution progresses.

Recovery from this period is rapid, and the patients general symptoms very much improved; even at times in a few hours a great change is wrought.
Percussion - during engorgement shows some lack of resonance, but as hepatization is established, and the lung becomes solidified, marked dullness is apparent. This dullness is one of our reliances in limiting the extent of the disease, since it is as a rule present, while crepitation may often be wanting, when a new portion of lung becomes involved
Auscultation in the first stage reveals over the affected part, a fine,

dry, crackling sound, which much resembles that produced by rubbing a wisp of hair between the thumb and finger, near the ear; this is the crepitant Rale of Pneumonia and the occurrence of this with "rusty sputa" almost confirms a diagnosis of the disease. The crepitant rale is limited to inspiration, and often, when hard to discover, is brought out more plainly after the effort of coughing As the disease advances and solidification is established, it gradually disappears, giving place to a blowing sound, which is produced by the motion of air in the bronchial tubes; the

bronchioles and vesicles being now rendered impervious, by coagulation of material in their cavities.
So perfectly is the sound transmitted to the ear through the now solidified tissues intervening, that it appears as if produced directly under the ear of the examiner; this is the characteristic Bronchial breathing of solidified lung tissue, and showing that Hepatization has taken place.
At this time if the patient whisper, or speak aloud, the ear receives the sounds with striking distinctness, and it almost seems as if the ear were near the lips, instead of on the chest.+ This abnormal transmission

+ Except that the articulation is not rendered more than normally distinct, which is the case in case of [illegible] the lung, giving the characteristic Pectoriloquy [illegible]

of the vocal sounds is favored
Bronchophony.
Vocal Fremitus is ~~much~~ increased
during Engorgement and especially in
Hepatization.
As resolution sets in, the bronchial
breathing gives way to fine, moist
rales, resembling much the crepitant
rale of engorgement, but differing in
having a liquid character. The
crepitant rale may also appear, in
some measure, during resolution.
On the involvement of a new portion
of lung, we may often find absence
of crepitation; and we have to rely
upon bronchial breathing and dullness
on percussion as a means of locating
its situation and extent.

If Gray hepatization follows upon solidification, the rales instead of becoming fine moist, and fading into the normal vesicular murmur, are coarse, rattling, and produced by the effusion in the Bronchial Tubes. The Pulse during the first & second stages is much increased in frequency, often reaching 110-120 per minute; and in severe cases 140-150 It is generally hard and full at the onset of the attack, but as the fever and inflammation progress becomes weak and soft. If resolution occur, it rapidly falls to normal, and at

times, much below the usual number of strokes. If the disease continue, its frequency and weakness remain unchanged, or may be intensified in proportion to the failing strength of the patient. There is headache and loss of appetite from the beginning of the attack, and these are apt to continue until convalescence begins, when the headache subsides and the appetite returns. Great thirst is almost almost always present, and is often a prominent symptom.

Pneumonia generally reaches its crisis at or before the end of the first week, when a change for

better or worse course. In the former case, the fever often rises quite high, soon to be followed by a fall to near the normal temperature, the pulse rapidly abates in frequency, thirst ceases to be so prominent, and then, with the gradual subsidence of cough and expectoration as resolution advances, gives the patient a sense of comfort and ease. Convalescence from this stage is rapid, and once established there is little danger of relapse; the patient may appease his returning appetite with almost any wholesome food, and, as soon as strength permits, may sit up. For this seems rather

to further the return to health than otherwise. A patient may recover from an attack of acute pneumonia at variable periods; sometimes an unusually rapid recovery takes place, and in about a week after the attack the patient is fairly convalescent, but in general twelve or fifteen days may elapse before convalescence is fully established; and under various conditions the disease may be much more protracted, even lasting three weeks.

Sometimes at the end of the second stage the fever remains & weakness continues to increase ~~only a short~~ of the fever occurs, and, instead of resolution and absorption, Purulent Infiltration

take place. The cough and dyspnoea continue, expectoration is purulent, the pulse weak and frequent, and the patient is in danger of death from exhaustion by the fever and impairment of the lung functions. Absorption and resolution may still occur, however, and recovery result.

Pneumonia sometimes results in the formation of abscess, and in Gangrene; but this is rare. Caseous Degeneration is more common. If abscess occur, there are often marked rigors, and a grayish yellow expectoration from the cavity. An interstitial pneumonia may be set up around the abscess, and its

cavity enclosed in cicatricial tissue,
or death may ensue in much the
same manner as in Gray Hepatization,
or rarely from perforation of the pleura.
In Gangrene there is a blackish
offensive expectoration, and great
collapse.
In caseous degeneration, the effusion
being insufficient to dissolve the
coagulated matter, a cheesy
solidification occurs which eventually
breaks down with great destruction
of lung tissue. In the transformation
into this stage, the fever only slightly
abates and persistent solidification
of lung tissue is evidenced by
percussion.

The Diagnosis of pneumonia is pretty sure on the occurrence of a marked chill at the onset, followed by high fever, pain in the side & dyspnoea; with these we are apt to find crepitation and later, rusty sputum, pathognomonic of Pneumonia. Discrimination must be made between Pleurisy with effusion, and this disease.

In the former, there is no initiatory chill, vocal fremitus is diminished over the area of dullness, which is apparent on percussion; whereas, in Pneumonia it is increased; the area of dullness often will change as the patient sits upright or lies

down. There is no vesicular murmur, hence no crepitant rale, as from Pneumonic inflammation. The sputa may contain blood, but it is in streaks, and not intimately mixed, giving the rust color which they so frequently do in pneumonia. The chest cavity is often enlarged in Pleurisy, and its contour altered by the effusion, whereas in the disease in question, no such changes occur. From Bronchitis it may be distinguished by absence of the chill; by the locality of the pain, which generally centres, and is most severe, under the sternum, and diffused to both sides, and not as severe as that of pneumonia with pleural involvement.

Instead of the crepitant rales, we have in the first stage, sonorous, or sibilant, and in the second, mucous or moist rales in contrast to the bronchial respiration of the second stage of pneumonia. There is not marked dullness of percussion note in bronchitis.

The Prognosis of an uncomplicated case of acute pneumonia is entirely good, in a previously healthy subject. Its tendency is to spontaneous recovery, which will often take place, provided the patients strength be sufficient to sustain the severity of the attack, with no especial treatment.

There is very little tendency to relapse

when convalescence is not fully established; the main danger is from failure of the patients strength, and our treatment is therefore mainly supportive, and directed to the palliation of distressing symptoms. In the aged, and very young, the disease is much more grave - weakness of the system in general in old persons, and difficulty in diagnosis and treatment, in the very young, rendering the prognosis more unfavorable. When a large portion of lung is involved, the hyperæmia, and ædema in the surrounding tissues may so impair the functional activity in the lung

as to cause death from imperfect respiration. Purulent infiltration is apt to terminate fatally, and drunkards, and those possessing a naturally weak and frail constitution are more liable to succumb to the severity of an attack. A temperature above 106, or pulse more frequent than 120 per minute, is an unfavorable sign. Absence of sputa, or that of a very dark prune juice color, make the prognosis more grave. Pneumonia is found at times as a complication of some other disease, when it is spoken of as "secondary" and with primary pneumonia we also have complications as pericarditis (for ex: which, occurring, greatly increases the danger

When death takes place during the first stage, it is generally occasioned by the intense hyperæmia and ædema; which, preventing the vesicles from carrying on their functions, cause carbonic acid poisoning. There is coldness of the surface, great dyspnœa profuse frothy sputa exhibit rales are diffused over the lungs; this state resulting in death from general failure of the lung power. If the second stage terminate fatally, the result is generally brought about by the exhaustion from febrile action. The fever assumes a nervous form, there is much prostration, and death results from the overcoming of the patients power of getting sufficient air to maintain life,

by suffocative effusion. Somnolency, stupor, and all those wild delirium are here present.

Should purulent infiltration occur, death is apt to occur in a much similar manner, slight rigor, with intermitting of the general prostration, and weakness, mark this stage.

Since in an uncomplicated attack of Pneumonia, of not more than usual severity, there is a marked tendency to spontaneous recovery, and the chief source of danger lying in failure of the patient's strength, to cope with the morbid action, and the tendency to give way under the exhausting influence of the inflammation

and continued fever, we direct our treatment principally to the amelioration of the painful symptoms; and more particularly to support of the vital and powers of resistance; and in this way, we can often tide a patient over the crisis of the disease, and bring about recovery with no other treatment. It is often well in the beginning to deplete the patient with a saline purgative, and to follow this with Opium. The opium has a soothing effect, relieving the pain, quieting the nervous symptoms, and gently adding to the comfort of the sufferer. It should not be given when there is a tendency to accumulation of

secretion in the bronchial tubes. When at the outset, in a robust and plethoric subject, the fever runs up to a very high point, and the pulse becomes very rapid and there seems danger to the patients life from the severity of the fever alone, or when the intense congestion in the affected portion of lung and oedema in the healthy tissue around threaten to produce suffocation; or where there are symptoms of pressure of blood in the brain, venesection may be found beneficial. It should not be employed in weak delicate subjects and should only be resorted to at the beginning of an attack.

where the pulse is full and strong, and the patient robust and healthy. In general it is better to make use of some other sedative agent as Aconite, Veratrum Viridis, or Digitalis. Aconite as a sedative is preferable to Veratrum, and Tartar emetic, acting well & without the depressing effect which the latter tend to produce. It may be given in drop doses of the Tincture, every half hour, until the temperature is reduced satisfactorily, when it may be continued at intervals of an hour in the same dose until the fever subsides. Should the temperature again rise, it may be again resorted to in the same way.

all the effects are produced.
After reducing the temperature by aconite, quinine may be given in the interval. It has an effect in preventing febrile rise, and also exerts a beneficial tonic influence. Dose of two grains every two hours, or in one or three ten grain doses at short intervals.
Aconite lowers the temperature, lessens the rapidity of the pulse, and diminishes the arterial tension and also slows the respiration.
Veratrum Viride acts promptly in reducing temperature, lessening the frequency and force of the pulse, and consequently diminishing the amount of blood circulating through the lungs

but its use must be avoided in weak patients where the pulse is frequent and soft. To maintain its effect it should be given every four hours.

Digitalis has been much used in pneumonia. It slows the heart's action, while it increases the force of its contractions. In Pneumonia the right side of the heart is overfilled with blood from the impediment to its free flow through the lungs, while the left side, by the same obstruction, receives very little blood, and its contractions are weakened by the fever and inflammatory action also. Digitalis may here be of benefit in

regulating and imparting force to the circulation, and preventing the tendency to the formation of clots in the heart and arterial system, of which there is danger in hyaemonia, on account of the marked increase of fibrin in the blood, and the tendency of clot formation where circulation is impeded and their blood accumulated in the circulatory system.

Ammonia has been recommended as exerting a good influence in preserving the liquid state of the fibrin in the blood. It can at least do no harm, and is a heart stimulant, hence may prove serviceable. It may given in doses of 5 to x grains every two or three hours.

The principal treatment is, however, the nourishment, and preservation of the patients strength.
He should be caused to take milk, with animal broths and such nourishing beverages, in considerable amount; and as soon as signs of failure of strength, and tendency to give way under the exhausting influence of the fever and inflammation are noticeable, stimulants should be resorted to, and given in proportion to the weakness and exhaustion of the patient. Whiskey may be freely given in milk, combining nourishment with stimulation, and this may alternate with carbonate of ammonia

in five or ten grain doses, allowing an interval of one or two hours between the doses, according to the need of stimulation. The Ammonia is well taken in milk also. While giving these or other stimulants, the pulse must be watched, and care taken not to carry their effects too far.

Some cough mixture, such as a combination of Tr Opii, Syr. Ipecac, and Squill, may prove of benefit in loosening the expectoration, and adding to the patients comfort by removing the difficulty in raising and ejecting the tenacious matter. If the extremities become cold, a mustard foot bath, or plaster, to the feet and lower portions

of the limbs are beneficial. In case of severe pleuritic pain, warm poultices over the part afford much relief. The poultice may be covered with oiled silk which retains for a longer time the heat and moisture.

In many cases, quinine to keep down the temperature, more powerful antipyretics if the fever rise too high, with good nourishment, opium to secure rest and quiet nervousness, and the use of soothing applications to the chest prove sufficient to carry the patient safely through an attack of moderate severity, and only as occasion demands do we have to resort to other remedies.

Very Respectfully

D. St. Pierre Du Bose